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CONTENTS

4 FOREST FORUM

5 FORESTRY SUCCESS STORY—Frank Heyward, Jr.

6 ZON • *Earle H. Clapp*

7 WASHINGTON LOOKOUT • *Albert G. Hall*

9 EDITORIAL — Accent On Research

10 NEW TREES FOR AMERICA'S STREETS • *Creighton Peet*

14 CHRISTMAS TREES . . . PROFITABLE WOODLAND CROPS • *L. S. Matthew*

17 CHRISTMAS WASN'T COZY • *Peg Kienast*

18 THE BIG DAM FIGHT • *Cleveland van Dresser*

20 WOMEN IN CONSERVATION • *Henry Clepper*

23 READING ABOUT CONSERVATION • *Jack Durham*

24 NO MORE SEEDLING SHORTAGES? • *Erle Kauffman*

27 UTILIZATION TODAY AND TOMORROW

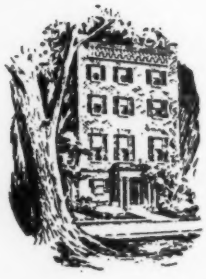
28 PLANES OVER TEXAS PINES • *C. C. Springfield*

32 NORTH CAROLINA FIRE MEETING • *James B. Craig*

35 NLMA ANNUAL MEETING • *Betty Fadeley*

38 THE FORESTER'S NOTEBOOK • *Kenneth B. Pomeroy*

40 TOOLS FOR THE CONSULTING FORESTER • *Ed London*



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The American Forestry Association, publishers of *American Forests*, is a national organization—independent and non-political in character—for the advancement of intelligent management and use of forests and related resources of soil, water, wildlife and outdoor recreation. Its purpose is to create an enlightened public appreciation of these resources and the part they play in the social and economic life of the nation. Created in 1875, it is the oldest national forest conservation organization in America.

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California Fire Fatal to Eleven

THREE Forest Service officers, seven volunteers from the San Diego County Prison Farm and a guard lost their lives in the Ramona, California fire that was still raging out of control on the fourth day, as *American Forests* went to press.

Almost 2,000 men have been battling this blaze in southern California which has already blackened 40,000 acres of the Cleveland National Forest. Unfavorable weather conditions, including winds up to 40 miles per hour, have made the fire most difficult to control.

However, at last reports, fire crews had succeeded in controlling the blaze on 80% of the fire's 75-mile perimeter, and if favorable weather conditions prevail, the rest of the fire would probably be under control shortly.

The 11 men who lost their lives in the blaze, had been fighting the fire in a canyon in the Ritchie Creek area about 30 miles northeast of San Diego. A sudden shift of wind trapped the men against a cliff in the blazing canyon, but six other members of the crew managed to escape death by running from the fast-moving flames.

The fire, one of the worst in recent California history, started from a trash fire on the Inaja Indian Reservation. It advanced into the El Monte Canyon, and threatened El Monte County Park, 22 miles from San Diego.

This fire recalls another California blaze three years ago, when 15 fire fighters were burned to death after an arsonist had set fire to brush near Willows, California, so he could get a job cooking for a crew.

The Big Debate

The big debate that has now been joined on the merits of the Wilderness Bill of Senator Hubert Humphrey and others continues on the following page in our *Forest Forum*. Last month we presented points of view by Senator Humphrey, Dr. Olaus J. Murie, former Judge Charles C. Haines and Charles H. Porter. This month we present statements by Dr. H. H. Chapman, of the Yale Forest School and Stuart Moir, Pacific Northwest forest counsel, and a comment by Senator Arthur Watkins, of Utah.

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Forest Forum

Wilderness Bill

EDITOR:

May I have your organization's permission to reproduce, by mimeograph, the article and editorial on the National Wilderness Preservation System, as published in your issue of August, 1956?

I wish to circularize the article among fellow members of Congress and conservationists in my home state, and to reproduce the statements in the Congressional Record after the opening of the 85th Congress. In addition, I should appreciate receiving from your executive committee an informal draft of the type of legislation you propose for endorsing the wilderness concept as a use facet without jeopardizing the principle of multiple use.

I commend your organization for the positive attention you have given to our fine wilderness areas by the sponsorship of your most commendable "Trail Riders" program. A growing number of my constituents and friends in other states have participated in these trips and have expressed extreme gratification for the experience.

Arthur V. Watkins
United States Senator
Utah

(Editor's Note **— Our Trail Riders, now more than 3,000 strong, are a closely-knit group. They know our forest rangers and their problems. Many of them are showing keen interest in a bill that will give wilderness recognition without jeopardizing the multiple use program.)**

EDITOR:

To avoid any misconceptions, the author wishes to state as a preface, that he not only supports a sound system of wilderness areas, soundly established and administered, but has vigorously defended the Roadless Area in the Quetico Superior Canoe Wilderness over its entire history. The purpose of this statement is to discuss the question: *What is a sound system of administration for such areas?*

The introduction of legislation, Senate 4013, proposing to cede to Congress final and permanent authority over the establishment and boundaries of wilderness areas within national forests, national parks, Indian reservations, wildlife refuges and the public domain, fairly raises the question of the meaning and significance of the term "multiple use" when applied especially to national forests, as administered by the U. S. Forest Service.

The conception actuating sponsors of the proposal is, obviously, the antithesis of multiple use of wilderness areas. Not only must such areas be set aside exclusively for public recreation, but this in itself shall be confined to access by water or pack trail, prohibiting airplanes and other traffic. Furthermore, in the management of these reservations, and except for forest fire prevention, which is universally approved, natural forces, whether creative or destructive, must be permitted to run their course. Only in this way, claim the advocates, can we realize the scientific, educational and recreational benefits of wilderness areas.

To the first of these principles, namely, the exclusion of motorized transport, the author has consistently adhered. But the second proviso, that of letting Nature take its course regardless, calls for further comment.

In Minnesota he was closely associated with the efforts and legislation to establish, first the Chippewa National Forest and later the Superior National Forest and Roadless Areas. In both of these instances, advocates of total, exclusive wilderness urged that policy. For the Chippewa, a national park was proposed. This despite the fact that it would mean outright purchase of the timber from the Indians at a cost of over $10,000,000, a plan which then had no chance of success. Instead the area was classified: a part for agriculture west of Cass Lake as a concession to its citizens; a part, 225,000 acres designated as a national forest under Gifford Pinchot in Agriculture, with seed trees and slash disposal; and a part, ten sections of land and Star Island in Cass Lake, was reserved for its scenic and recreational value.

This multiple use policy has met with universal approval.

At this point it may be well to emphasize the fact that multiple use does *not* mean indiscriminate uses of all kinds on an entire area. In sharp contrast, it requires classification and zoning. On some areas, exclusive recreational use is indicated. On others, forestry practice and grazing may be combined. Mining is a use that has given endless trouble, due to the rights inherent in old mining laws to alienate and obtain title to the surface, often under false pretenses for other than mining uses. Recent legislation affords a basis for correcting this situation.

The second instance, in a test of multiple use in Minnesota, was on the Superior National Forest. This area, examined in 1905 by the author, constituted for the most part an old burn on which jack pine and aspen had grown, which was then 35 years old. At 60 to 80 years both these species begin to deteriorate from rot. Had the "wilderness" policy of non-use been adopted on this great area, it would today be a true wilderness of falling and decaying masses of timber, a terrific fire hazard, not merely useless but a menace to the lake shores and remaining stands of white and red pine. But the policy actually incorporated, both by Forest Service regulations and by state and national legislation, was to reserve the timber along lake shores and portages and to permit forestry operations on the areas into which no campers or canoemen penetrated. Along the International Boundary, a wide belt, containing much good pine timber and beautiful scenery, was reserved from all cutting. This is an outstanding example of sound, practical "multiple use" by zoning. Unfortunately, many private and commercial resorts had invaded the area, requiring purchase by federal funds for their elimination.

In the last Congress, appropriations were made which were thought to be adequate for this purpose, but the money has to be appropriated separately, in the appropriation acts. The amount appropriated for this fiscal year—the first under the new authorization—is reasonable for one year. It should be continued. But there was included in the appropriation act, unfortunately, a provision which in effect gives the local counties veto power over acquisitions within their respective territories. The county principally concerned is now preventing acquisition within its boundaries.

Meanwhile, in 1949 by Presidential Order (Executive Order 10092), airplanes were prohibited from flying lower than 4,000 feet over the Roadless Area, hence could no longer be used to transport visitors and supplies to interior lakes and resorts.

More recently still is the case of the Mount Katahdin Baxter State Park in Maine, an area to be kept "forever wild," but on which, under enlightened state legislation, the commission in charge may take any measures necessary to protect and restore the forests from the effects of fire, wind, insects or diseases, and may regulate the balance of wildlife and predators.

On the other side of the picture are the Adirondack-Catskill State Parks and the enlarged Olympic National Park. In New York State, the term "forever wild," embodied in the state constitution, condemns "forever" the immense area of over 1,800,000 acres to Nature's destructive as well as creative forces. But when, in 1951, a wind of exceptional severity blew down great masses of virgin spruce in piles and windrows ten to fifteen feet high, it was too much even for those who through their societies for preservation of the Adirondacks, were constitutionally opposed to cutting any trees whatever on this preserve. Fires once started in the drying tangle of tops and boles would be uncontrollable and might result in there being no forests left to "preserve." So the constitution was set aside and as much of this timber logged as was accessible. Meanwhile the only portions of the preserve which serve the public for recreation are those that are accessible by roads and trails which were developed before the park was created, and on certain lakes where public camps are located. The great bulk of the preserve is not only exposed to the ravages of nature, but is inaccessible for any recreational purpose. This situation remains incurable due directly to the insistence of an "educated" public opinion to support the doctrine of wilderness as consisting solely of untrammeled natural forces.

On the Olympic National Park and its

(*Continued on page* 60)

Forestry Success Stories

(Reader interest in the task of filling up our forestry schools recently resulted in the proposal that we publish some profiles of men who have made a success of their forestry careers. This was the first submitted. We are in the market for others. All that is required is the salient information on foresters who have been successful in either public or private fields. We will rewrite material submitted to serve our needs. For each nomination accepted AMERICAN FORESTS *will pay $10. Editor)*

Frank Heyward, Jr.

YOUNG people of today who are debating whether the career of forestry can be both *satisfying* and *profitable* should take a leaf from the notebook of Frank Heyward, Jr. As director of public relations for the Gaylord Container Corporation in Louisiana, he holds down one of the highest-paying jobs in forestry. More than that, his practical bent plus his forestry knowledge encouraged him to buy his own tree farm of 6800 acres—which he regards as a gilt-edged investment for his family's future. Thus his future is already reasonably well assured and his family provided for despite the fact that he is still a comparatively young man.

Frank first became interested in forestry when he was a Boy Scout. A boy he did not particularly like caught him up on a boner he made in identifying a certain leaf in his leaf collection. Frank identified this particular leaf as red maple. The other boy said it was a sweet gum, and it was. Frank resolved that would never happen again and it didn't. From that time on he became a very determined amateur dendrologist.

Frank also liked the idea of building beautiful things and he took three years of architecture at Georgia Tech before he actually got the "call" for forestry. He immediately switched to the University of Michigan, where he soon decided to go into research. Consequently he took more science than the average forester, including such courses as organic and analytical chemistry and advanced courses in silvics and botany. Gradually his interest in dendrology changed to silvics (the study of the forest habitat) and he majored in forest soils while obtaining his Master's degree at the University of California.

Frank's first professional job was with the Southern Forest Experiment Station of the Forest Service, where he rubbed elbows with one of forestry's great men — the late Austin Cary. It was also Frank's good fortune to be closely associated with Dr. C. H. Herty during the peak of his research on southern pines for newsprint. And it was he who convinced Frank to give up research for the state forester's job. Frank was actually hand picked for the job by "Old Doc," whose advice he followed in spite of the warnings of his Forest Service co-workers, who thought that his should be a research job.

In 1937 he was named State Forester of Georgia, where he expanded the state nursery and stepped up forest fire prevention and control programs. By this time a number of key leaders had their eyes on the energetic young forester, and in 1939 he was selected to head up the newly organized Southern Conservation Pulpwood Association. Purpose of this new organization supported by the growing southern pulp and paper industry was to take forest management right to the landowners, particularly the small woodland owner. Thus its new director had a chance to pioneer in a new field, which always focuses attention on any individual.

As director of a forestry agency working with the public, Frank had an opportunity to display a whole new set of assets—namely, how to get along with people and how to make your point and be tactful at the same time. Unbeknown to him, these attributes were all being carefully screened for future reference; and in 1946 he stepped into the important job of director of public relations for the mill division of Gaylord Container Corporation, Division of Crown Zellerbach Corporation—one of the biggest and most enlightened pulp and paper concerns in the nation.

However, in addition to his rapid rise in the profession of his choice, Frank Heyward did something else that young people might paste in their hats. While at Lake City on his first job with the Forest Service, Frank bought a modest home. The original "do it yourselfer," Frank practically built the place; and when left, he sold his home for a nifty profit. This gave him a nest egg. Supplemented by a loan on his insurance policy and two mortgages, he invested the profit from his house in the thing he knew best — forest land — this despite the fact he couldn't see any immediate profit in the investment. But this calculated risk—faith in his own ability—paid off. Frank has been selling trees

(*Continued on page* 59)

His leadership helped gain recognition for forest research as an essential conservation activity

By EARLE H. CLAPP

ZON

DEATH which is so steadily thinning the ranks of the pioneer American foresters claimed Raphael Zon on October 27. Had he lived until December 1, he would have reached the ripe age of 82 years. His passing is a reminder of how recently the organized conservation movement of which forestry has been so conspicuous a part began in the United States.

Raphael Zon was born in Russia and received his initial college training in the Imperial University of Kazan. In a 1930 letter to The American Forestry Association, he described his departure from his native country: "Couldn't agree with Nicholas II as to the right economic and social course for Russia. Since he refused to budge, I had to leave." More specifically Zon had participated with others including a young Russian girl in organizing the first Russian trade union. For this he was sentenced to 10 years exile in northern Archangel. So was she. Both escaped when released on bail.

In the same letter, Zon describes his early intellectual interests in Russia and in late collegiate work in Belgium, England and the United States: "Dabbled in comparative embryology, political economy, social science, biology, philosophy, and finally forestry." When he arrived at New York via steerage with a financial backlog of 19 cents, the Russian girl, who later became Mrs. Zon, helped to overcome entrance difficulties. Not too long thereafter he entered the first American collegiate forest school at Cornell and graduated in the first class of 1901 with the degree of Forest Engineer.

Gifford Pinchot appointed him the same year as a student assistant in the Bureau of Forestry at the munificent annual salary of $300. Advancement to the forest assistant grade and then to the chief of the Office of Silvics, later Forest Investigations, came in 1905 and 1907 respectively. He became the first director of the Lake States Forest Experiment Station in 1923 and held that position until his retirement in 1944.

Zon's long career in the Forest Service was spent in such research as silvics, forest management, forest influences and forest economics. The inspired leadership which he gave to the early development of this research went far towards its recognition as an essential activity in American forest conservation. As one means to carry out this research, he recommended the establishment of forest experiment stations in the national forests—the first of several dating from 1908 only three years after the Forest Service became responsible for the administration of the national forests.

He responded to the challenge of the directorship of the Lake States Station, one of the first regional stations, with a record that has never been surpassed. Recognition by foresters was to be expected. The Universities of Minnesota and Wisconsin appointed him to professorships. The initial scepticism of some "practical" minded leaders of the forest industries was soon overcome. Zon met the pressing needs for a sound technical and scientific basis for forest management in his region by holding the members of his staff in the office each spring until they had written up the findings of their previous season's work. His station thereby gained a reputation for a phenomenal output.

Something over 200 articles and more comprehensive publications on a wide variety of subjects came from Zon's own pen. His *Forests and Water in the Light of Scientific Investigations,* first printed as an appendix in the report of President Theodore Roosevelt's Inland Waterways Commission became a classic. *The Forest Resources of the World,* of which W. N. Sparhawk was a co-author, was the first effort of its kind and after more than 30 years is still frequently cited. He edited a comprehensive publication on shelterbelts which was an important factor in the basic plan and technical handling of that once highly controversial and now famous project. Zon wrote the article on "Forests and Forestry" of the *Encyclopedia Britannica* and that on "Forests" in the *Encyclopedia of Social Sciences.* He was the editor of forestry and logging terms for Webster's new International Dictionary. The translation of a number of his publications into Russian, French, Spanish, German and Japanese helped to give him world standing.

(*Continued on page* 44)

By ALBERT G. HALL

THE OVERWHELMING PERSONAL VICTORY OF PRESIDENT EISENHOWER in the recent election stands in rather sharp contrast to the defeat of some Congressional aspirants within his party. It is difficult, nationally, to determine how, if at all, resource conservation policies contributed either to the President's success or to his party's lack of similar success at the polls. In the Northwest, it is believed that the "give-away" charges hurled at the Administration had some effect; but it must be remembered that the charges were leveled at the President as well as at his cabinet members and supporters in the Congress. Also, the far West has been increasing in Democratic strength for a number of years — before the conservation issues which were raised in the recently completed campaign were brought before the public. (For additional comments on the election, turn to page 51.)

WHATEVER THE REASON FOR THE DEFEAT OF THE MORE CONSERVATIVE CANDIDATES, particularly in the Northwest, the result is a strengthening of the public power vote in the Congress from that area. It can be expected, therefore, that the 85th Congress will deal with additional attempts to advance not only public power, but along with it additional attempts to center in the federal government more responsibility for policy and action in resource management generally. However, the President seems to retain his strong belief that a partnership among the states, private enterprise and the federal government is the correct approach to resource development. His victory in the election can be considered a vote of confidence which would make it difficult for even a strongly one-sided Congress to override his veto power. It is expected that he will use that veto power, when necessary to keep legislative action in line with the platform on which he ran. And the Congress is not strongly one-sided, it is just barely so. In fact, even with the absence of some of the old-line Republicans, the Congress appears to be more conservative than either of the two major parties.

THERE ARE NO NEW OR DRASTIC LEGISLATIVE PROPOSALS AFFECTING FORESTS and other renewable resource programs within the President's program, and it is unlikely that any will develop, despite a recent announcement that conservation policies are being reviewed. The need for such legislation is not evident. Over the past half century a body of statute has been built up; this provides sufficient authority to the Executive Branch to develop or to continue and improve sound resource programs. What is needed more than new legislation is an examination of existing statutes and sound programing within them.

A STUDY OF FEDERAL TIMBER SALES POLICIES conducted jointly by subcommittees of the Senate Committee on Interior and Insular Affairs and of the House Committee on Government Operations has resulted in numerous recommendations affecting the policies of the U.S. Forest Service, Bureau of Land Management and the Bureau of Indian Affairs. With a few exceptions, the recommendations can be put into effect through administrative action. Several of the recommendations have already been acted upon by the bureaus concerned. The two subcommittees, known unofficially as the Joint Committee on Federal Timber, conducted hearings in the West and in Washington, D.C. in the fall of 1955. Last month, a staff report was published as a supplement to the earlier committee report, H. Report 2960. The staff report gives the background of the considerations on which the earlier recommendations were made.

(Turn to next page)

CONSOLIDATION OF FEDERAL FORESTRY FUNCTIONS WITHIN THE U.S. FOREST SERVICE is the most far-reaching recommendation made by the joint committee. The staff report goes to considerable length to justify the recommendation on the basis of governmental economy and better management of the resource. The proposed consolidation would combine the forestry functions of the Bureau of Indian Affairs with those of the Forest Service and the Bureau of Land Management, pending final termination of federal control over the Indians and their property. Unified management was also recommended in the 1949 report of the Commission on Organization of the Executive Branch of the Government (Hoover Commission). The Commission also recommended consolidation within the Forest Service, but a commission task force recommended consolidation within a proposed Department of Natural Resources. It is unlikely that any early attempt will be made to effect either type of consolidation. However,at least partly as a result of the current committee report, it is probable that closer coordination of policies among the several agencies will be accomplished.

AS A FIRST STEP TOWARD CONSOLIDATION OF FEDERAL FORESTRY FUNCTIONS, the report recommends a land classification study to determine the areas that should remain in federal ownership and to develop criteria for continuing federal management. This is advanced also as a means to provide the basis for better management of the federal lands, even without consolidation. This is a phase of the committee's program that may obtain considerable support. The public lands have been retained and acquired in a hit or miss fashion. They consist of remnants of the public domain and of lands acquired by the federal government wherever and whenever private owners or states permitted, whenever federal funds were available. That a new up-to-date review of the landownership and land management picture is desirable is evident in the interest being expressed in the landownership study being conducted by The American Forestry Association. The bill introduced by Senator Long of Louisiana in the 84th Congress, calling for the establishment of land study commissions within the states, also stimulated considerable interest in the landownership pattern. It is conceivable that if a strong workable plan for a land study is advanced, it can receive Congressional approval.

THE DOLLAR VALUE OF FEDERAL PROPERTY will be established for the first time as a matter of public record in a study now being made by the House Committee on Government Operations. As a public service, the American Institute of Real Estate Appraisers will assist the committee and the federal agencies in developing guidelines for use in estimating current values. The committee's reports in the past have shown acreage and acquisition cost for acquired lands. With the new guidelines, an attempt will be made to place present-day values on lands withdrawn from or still in the public domain.

REGULATIONS FOR CONTROL OF SURFACE RESOURCES ON UNPATENTED MINING CLAIMS have received final approval by the Department of the Interior. They were first proposed and published in July of this year. The regulations implement Public Law 167 (the Act of July 23, 1955) which provides for multiple-use of surface resources as a means of avoiding abuses of the mining laws. Promptly upon approval of the regulations, the Department appointed seven hearing examiners for the western states and Alaska to expedite the settlement of old claims, as provided in the new law.

PRICE REPORTING OF FOREST PRODUCTS, a measure proposed by Senator Hubert Humphrey in the 84th Congress, is expected to be on the Congressional agenda in the 85th. Attempts were made to include the measure in the Soil Bank legislation; it appeared in the Senate version of both the first (vetoed) and second bills for the 1956 Agricultural Act but was stricken from both by the Senate-House conferees. Opposition to the measure was strong. No hearings were held, but the Senate passed the bill as a separate measure a few weeks before adjournment. It was not acted upon by the House. Purpose is to provide within the Department of Agriculture a price reporting service for logs, pulpwood and similar forest products. The original Humphrey bill also provided for the recommendation by the Department of Agriculture of parity prices for such products.

Editorial

ACCENT ON RESEARCH

For the first four years of the Eisenhower administration the Department of Agriculture has placed great emphasis on research and education as a creative force to benefit agriculture. This same view was recently expressed with regard to forestry. From past performance we may appraise what is likely to occur during the next four years.

One clue as to how this emphasis on research is likely to affect forestry was provided in a forest policy statement of October 5 by Assistant Secretary E. L. Peterson that now assumes new significance in view of the outcome of the election. Speaking before the Association of State Foresters, Mr. Peterson saw the "parallel avenues of research and education" as the most appropriate channels through which the department can funnel aid and encouragement to woodland owners. "Timber culture is relatively new in this country," Mr. Peterson said. "We need much more basic information than we now have in order to do the kind of job that should be done. And the results of this research must be made generally available. Progress is bound to be slow and costly for the private landowner unless government takes the initiative in research and education."

This emphasis on research is good news to AFA which next year proposes to sponsor a North American Research Congress, September 30 to October 3 at Madison, Wisconsin. Purpose of this conference on the subject "Utilization Today and Tomorrow" is to spell out the research needs as set forth in AFA's Program for American Forestry. Calling this conference at this particular time now appears to have been a timely stroke. Unless all the signs are wrong, the Department of Agriculture, after laying the necessary groundwork, is now ready to step out with one of the most ambitious research programs in history. Thus the Madison conference, with the big Forest Products Laboratory serving as a backdrop, now finds itself in a pivotal position in helping to point up public and private views on overall forest research needs —and what to do about them.

In addition to his comments on research, Mr. Peterson's paper at La Plata, Maryland, is of significance as a Department of Agriculture overall forest policy document.

"We held to these concepts," Mr. Peterson said: "1) Government—federal or state—should itself undertake only those tasks which the people in their private capacities—in this case private forestry—cannot themselves accomplish; 2) wherever and to whatever extent there is federal participation in forestry on privately-owned lands that participation should be undertaken and applied through and in cooperation with the states through their established organizations. This means you—the state foresters responsible for the operation of state forestry departments.

"Within these concepts we in the Department of Agriculture have been and will continue to be responsible for the operation of the national forests," the secretary continued. "For a long time our position was largely a custodial one. Changes in demand, utilization, logging and manufacturing methods, and particularly changes in the availability of privately-owned timber, have largely brought about a change from our position being one of custody to the much more difficult task of managerial responsibility. It is our objective to bring all our national forest lands under complete management on a sustained yield, multiple use basis at the earliest possible time."

At this point, Mr. Peterson asked, "What is conservation?" In his opinion, "forest conservation is synonymous with forest-land conservation. It means conservation of all renewable resources on forest land. To me there is one thing it doesn't mean: preservation. Resource conservation means resource use. It does not mean locking up—no use. Our great natural heritage has no meaning and significance except as it is used to provide the materials and services which as a people we must have to enlarge and enrich our living. In a very real sense, our very lives depend on our basic natural resources. Resources unused are sterile—of little value. Conservation of renewable resources must mean wise use—intelligent use—use in a manner which will *preserve* and *intensify* the capacity of the basic resource to keep on furnishing the materials and services we need and want *without eating into the capital itself . . .* "

In turning to timber production, Mr. Peterson said that the recent nationwide analysis of our timber situation showed clearly the size of the job as it relates to privately-owned forest land that has and always will provide the bulk of our timber requirements. This is the meeting ground for the great commonality of interest between "your organization of government and my organization of government," the secretary told the state foresters. It's a big job, "but I'm convinced that we can do it . . . " To accomplish the task, we must "1) restore to productivity by planting something like 50 million acres; 2) we should increase productivity on an even larger acreage which at present is understocked; 3) we must see to it that lands logged over in the future are more quickly reforested than has generally been done in the past; 4) we must find ways and means to more completely utilize what we do produce since one-fourth of the timber we cut is not now utilized in any way; 5) we must do even more—much more—to put our forest lands to work, to make them more productive than many of them now are."

Who should do this job? "Here again I think the answer is fairly clear," the secretary said. "I have spoken of the responsibilities of public agencies, both federal and state, to do a good job on lands under their supervision. On private lands the basic responsibility under our concept of government should be and is on the owner himself. He himself has to take the initiative. He himself must carry through. Within the broad policy and framework of directives established by Congress and the state legislative bodies, government may help the private forest land owner; but in the end and fundamentally, the basic responsibility is his."

In developing the theme that the "parallel avenues of research and education" present the most appropriate channels through which the department can funnel aid and encouragement to woodland owners, Mr. Peterson saw a continuation of the present cooperative arrangement that calls for participation by the federal government, the state governments, and the landowners. However, the primary responsibility for dealing directly with the landowners must rest with the state agencies, he believes.

"Let me make it clear that except possibly, for some aspects of fire control, government should not attempt to do the job for the private landowner," the secretary said. *"Our task is to help him get started, see to it that he gets started in the right direction, and encourage him to keep going."*

How does the department propose to do this? Here Mr. Peterson sees stepped-up research programs as a tremendous lever when coupled with educational programs. In taking the initiative on both fronts, the secretary said, "1) We can help the private forest landowner protect his investment. This may take the form of information and advice to enable him to combat the attacks on insects and disease. It may be actual assistance in control of fires, especially when these blow up beyond the stage of one-man control; 2) We may appropriately help him to obtain planting stock; 3) We can help him to meet his need for instruction in methods of measuring his timber crop and evaluating it for sale; 4) In instances when public benefits justify it, we may offer some form of financial assistance; 5) Most urgently, perhaps, we can assist him in planning the steps he needs to take to make his land fully productive."

All of which leads us to believe that we are heading into a new period of unprecedented research advance, and that AFA is right on the beam in its plans to push this phase of its program to the fore in 1957.

Street trees won't just "happen" any more, according to the new approach being taken by city park and recreation departments. Today, trees are being laid out when street lights and traffic signals are planned

NEW TREES FOR AMERICA'S STREETS

BY CREIGHTON PEET

AFTER a long period during which they often came to be looked upon as both nuisances and symbols of small towns, street trees are returning to American cities and towns. The most surprising planting is that of 1,000 London planes along seven miles of New York City's Third Avenue, which has just come out from under a 77 year occupation by an elevated railroad. Until recently it had been a shabby and, at its Bowery flop house end, a dismal thoroughfare.

Tearing down the old "L" and widening and repaving the avenue were all essential, but the touch which is really justifying the new term "boulevard," is the planting of four trees on each side of each block.

A much larger planting, but in a more conventional setting is that of 60,000 trees along the winding roads of Levittown, Pennsylvania, the vast new 8-square mile development which has 17,000 houses. Metropolitan Life's many housing projects, from Parklabrea in Los Angeles to Stuyvesant Town in New York have also called for many thousands of trees.

All over the country, city park departments are reminding home owners that trees are not only beautiful in themselves; but that they change the whole character of a neighborhood for the better, making it more attractive and more comfortable. Further, trees provide shade, reduce glare, muffle traffic noises, give privacy, purify the air and increase the value of property.

The dislike of street trees, and their removal from hundreds of streets in the 1920's and 1930's is easy to understand. Cracked pavements, root-clogged sewers, dangerously underlighted streets, completely obscured traffic signals, and a seasonal littering by such trees as cottonwoods or the female ailanthus gave city fathers excellent reasons for removing thousands of such trees. Overhead utility wires and cables, and trolley wires have also run into trouble with street trees in the past, and often resulted in such drastic and unsightly pruning that it seemed better to remove them entirely. And when a large tree or branch was blown down in a storm, both phone and electric service were often cut off for hours. At present trolleys are disappearing rapidly, and increasingly utilities are placing their lines undergound.

However, in recent years it has been realized that many of our older street trees were never planted or planned for. They just happened to

The New York City Department of Parks operates this tree nursery on Rikers Island in the East River, within sight of that city's famous skyline and the Hell Gate Bridge

Another scene of the Rikers Island nursery, which is typical of city tree nurseries. One thousand London planes have been transferred from this nursery to New York City's Third Avenue, where four trees were planted on each block

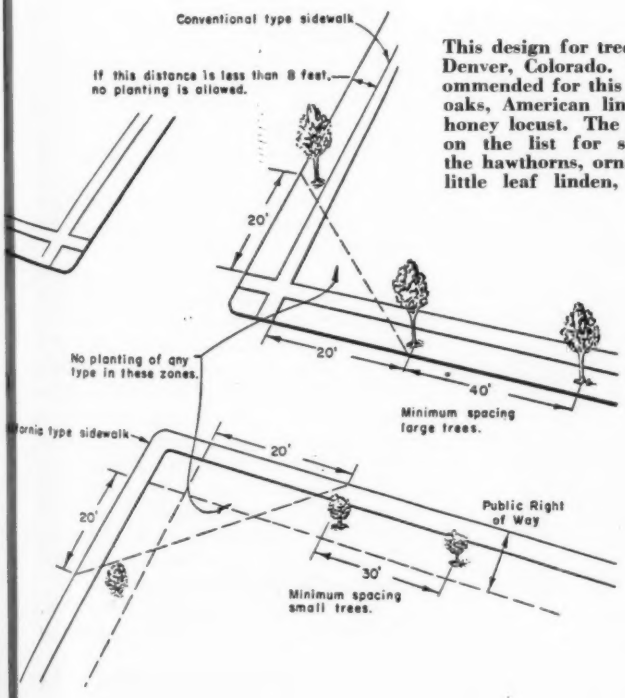
be there. They started out as natural roadside trees, and as the town expanded, they were left standing, provided they didn't get too much in the way. (However, in almost every small American town and suburb there are a number of ancient trees growing right smack in the middle of the sidewalk — they were there long before the town was on the map.)

People were, and in most cases still are, very grateful for the shade and beauty these trees gave their towns, and often there have been bitter arguments over their removal. If they do not obstruct traffic lights and nobody really objects to the heaving pavements on Main Street, they stay.

Today city park and recreation departments have a new approach to street trees, planted either between sidewalk and curb, or on the owner's property but very near the street. One thing all are agreed on is that when possible, tree plantings should be laid out at the same time street lights and traffic signals are planned, so that there will be no conflicts, even years later when the trees have matured.

The most extreme examples of this planning, of course, come in the case of vast, mass-produced housing in which hundreds of acres are cleared by bulldozers and all existing trees are annihilated. Then, to repair the damage they have done to the landscape, real estate developers, sometimes voluntarily, and sometimes in compliance with local regulations, replant trees around their housing sites particularly selected for urban living.

While different types of trees are of course popular in different climates, forestry men have by now



This design for tree planting is used in Denver, Colorado. The large trees recommended for this purpose are maples, oaks, American linden, hackberry, and honey locust. The small trees included on the list for street planting were the hawthorns, ornamental crab apples, little leaf linden, and Ohio buckeye

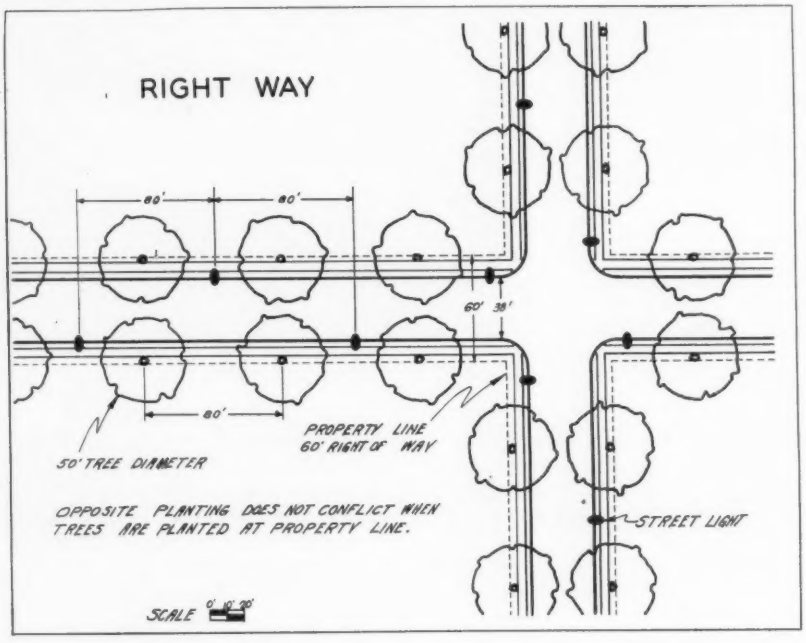
pretty well agreed on some general characteristics to look for—and to avoid—in choosing street trees.

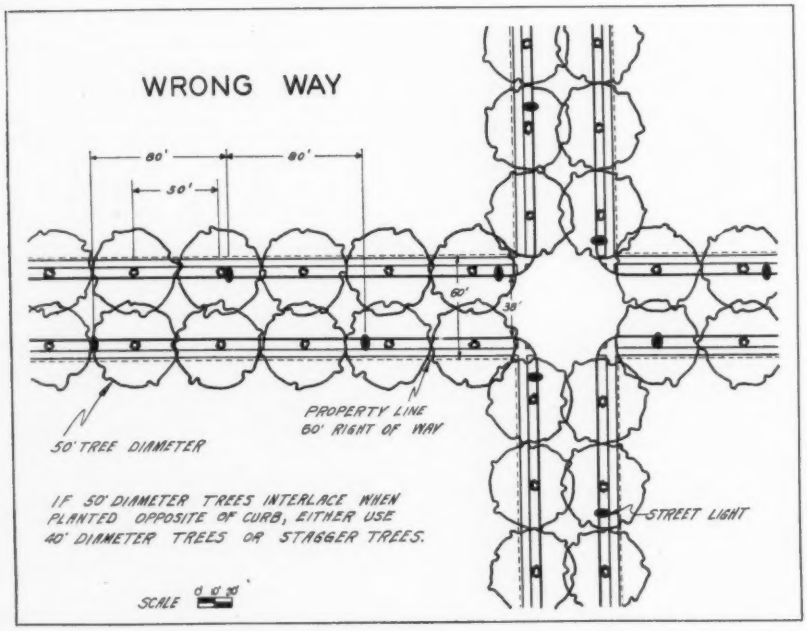
1. Street trees should not normally have branches less than 12-16 feet from the ground. This excludes many fruit trees. Low branches obscure traffic lights, hide cross street traffic and obstruct pedestrian walks.

2. Street trees should not have roots which will seek water to the extent of breaking into and clogging clay sewer pipes. This excludes poplars and silver maples. However, Norway maples have shallower roots and make excellent street trees.

3. Trees which grow to excessive heights, such as the tulip, are not desirable, nor are those which are so excessively bushy that they will cut off all street lighting when fully grown.

4. Trees which shed excessive litter on streets and sidewalks such as the cottonwood or the female ailanthus, are not desirable. And the Chinese elm, for example, is so brittle that it is subject to breakage even in a moderate wind.





In the matter of choosing the types of trees suitable in any given locality, and the matter of their location and spacing, park departments all over the country have done a good deal of serious research in recent years, and many are able to furnish home owners with pamphlets giving regulations and recommendations.

In nearly every case a permit—usually free—is required before a tree is planted, and in most localities the types of trees permitted are limited. In many cases town planners have decided that a better effect is produced by having all the trees along any given street of the same type—although encouraging other types of trees in other parts of town, or even in adjoining streets.

In Denver, Colo., on the other hand, the Department of Parks and Recreation feels that "a planting which sets off the residence is more desirable than one which is done for the street alone." Obviously such a program could only be valid in a block in which there were only a few houses, each with some little ground.

In Minneapolis, owners are permitted to plant their own trees in blocks where some trees already exist; but in new blocks the city plants boulevard trees in the entire block at once, and then assesses owners.

Probably the most satisfactory and economical means of caring for street trees, is to have such work done by the city, as expert pruning and spraying can be quite expensive if only two or three trees are involved.

In some communities, such as New York City, this type of care is compulsory for the city's 536,000 street trees. The home or apartment owner pays the cost of planting trees and cares for them for one year—but after this time the city automatically takes ownership and assumes all responsibility for care.

Typical of the cooperation of many park departments in getting street trees planted, is that of the Detroit forester. Recommended are elms, sycamores and Norway maples, which the city will plant and guarantee for five years. Charges are: $15 for a tree 2½" in diameter; $20 for one 3"; $25 for 3½" and $30 for one 4". These trees must be spaced at least 40 feet apart, and be at least 30" from a sidewalk. As a result of all this encouragement, Detroit now has over 650,000 street trees.

Some localities, such as Riverside, California, sell shade trees from the

city nursery to home owners at wholesale rates—at a cost to the city of $123,000 a year. Here, subdividers are required to set out young trees at their own expense.

In Connecticut, it has been decided that smaller trees with trunks only 1"-2" in diameter have a better chance of survival than larger ones, particularly in locations where chances of survival are poor.

One of the most extensive studies of street trees of recent years is that done by the Bureau of Governmental Research and Services at the University of Washington, in Seattle and issued in 1950.

Fully grown street trees, it has been estimated have a cash value to their towns of about $200 each, and it is recommended that this valuation be kept in mind in making appropriations for their care and maintenance.

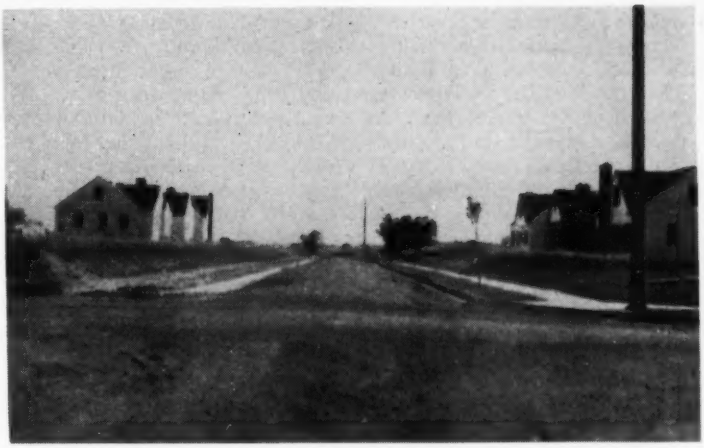
Removing dying or dangerous trees is of course quite as important as planting young ones. Severe wind or electrical storms often split or weaken otherwise sound trees, which then become a menace which can only be cared for by an expert.

As to which trees are recommended for street planting, the list is endless and varies in every part of the country. In California the Metropolitan Life planted, among other things, royal palms and eucalyptus trees at its Parklabrea housing project—while in Anchorage, Alaska, the white birch is favored as a street tree because of its resistance to cold.

Generally, throughout the eastern states, London planes, Norway maples, red oaks, honey locusts, ginkgo, little-leaf lindens and amoorcork trees, which grow rapidly and take to city life, are planted.

Many city foresters have developed specialties. The Baltimore Department of Recreation and Parks, for example, reports special success with the Augustine ascending elm, which it has found extremely fast growing —trees of 1½" caliper having increased to 5½" in four years, and grown from 8 to 17 feet in height. Further, these trees have a compact root system which keeps out of the way of underground utilities—and a dense foliage.

Generally, pits for street trees are about 6x6 feet and 3 feet deep, and a certain amount of manure or other fertilizer is mixed with the filling soil. Uncemented, widely spaced bricks or cobblestones allowing for watering, are usually placed on top to keep soil in place, and guards of some sort are always necessary for some years.



Minneapolis street where trees have not yet been planted, but the Park Board has an outstanding municipal street planting program

The city of Minneapolis is well known for its splendid park system and for the beautiful boulevard trees along its avenues and streets

These trees were planted by the Minneapolis Park Board, all at the same time, using one variety of proven worth to insure uniformity

With the possibilities for annual harvests and the short rotation required for a marketable product, Christmas trees are a crop that is most appealing to farmers

CHRISTMAS TREES . . .

By L. S. MATTHEW

CHRISTMAS trees will be the center of attraction during the holiday season in many homes. Even though they may travel thousands of miles from western Montana, their native land, they will arrive erect, fresh, and beautiful to bring the spirit of Christmas to millions of families.

For many years the Montana Douglasfir has been a favorite Christmas tree. Its popularity is attributed to the naturally symmetrical form, the dense, soft, blue-green foliage and pleasing fragrance. The pliable branches are easily baled and the trees can be handled repeatedly with little breakage. Trees cut in time to reach distant markets for Christmas retain these qualities which make them popular.

The number of trees produced since the first shipments from Eureka, Montana, in 1927, has steadily increased until the Christmas tree industry is often referred to as a million dollar business. In 1954, production reached an all time high for western Montana of three and one-half million trees.

The Christmas tree industry was a natural development in the larch-Douglasfir forests of western Montana. Large areas now producing Christmas trees were originally cut-over tax delinquent lands purchased by farmers and ranchers for grazing. But favorable conditions for reseeding resulted in natural restocking. Instead of having grazing lands the owners found that within a few years they were in the Christmas tree business.

During the early days of the Christmas tree industry, it was common practice to harvest the best trees, then move to new areas. But, like the logging industry, it soon became no longer possible to cut new areas each year.

So, the Christmas tree cutter returned for a second look at the areas where the first harvests were made. To his surprise, additional trees had developed within a short time. He also discovered that some of the stumps from which trees had been cut were still growing. The upper branches had become erect and in some instances a second tree could be harvested. Sometimes a second tree had started from a sprout along the trunk instead of from a branch turn-up. More frequently all of the branches in the top whorl of the stump had grown erect with the result that no one branch or sprout had sufficient space to develop a full symmetrical crown.

Seeing the possibilities of growing trees from "turn-ups," cutters began to trim the stumps to encourage the growth of a single stem which would develop into merchantable trees.

Considerable variation in types of trimming developed. Some cutters left most of the lower branches, but removed all but one from the top whorl. Others pruned the stump severely, leaving only a few branches toward the top of the stump. Some claimed more immediate "turn-up" response for a branch left on the north side of the stump.

Growers also began to experiment with various methods of trimming to improve crown density. Practices varied from pruning away lower portions of the crown to severe blazing along the trunk or "scabbing," to check the leader growth. Each system had its merits according to the originator, but there was

At concentration yards trees are sorted by lengths and culls are discarded

Wreaths, sprays, and decorative rope use tons of evergreen boughs annually

Photo illustrates questionable practice of severely pruning lower branches in an attempt to develop more compact Christmas trees

Cooperator with Lincoln Soil Conservation District selects tree for cutting. A tree has already been harvested from this stump

Profitable Woodland Crops

no quantative evaluation of the actual effects of the various practices.

Regardless of the systems advocated, the increasing interest in trimming indicated the growing recognition that management was necessary if Christmas tree lands were to continue to be productive. But production was not the only problem. There seemed to be a gradual decline in the quality of trees.

In 1941, the first Soil Conservation District was organized in western Montana. By 1954, all of the area west of the continental divide was included within districts. The importance of Christmas trees as a farm crop (approximately 80 percent of the trees are grown on farms), and the need for maintaining quality in production were soon recognized by district supervisors.

The supervisors of eight western Montana districts meeting in Kalispell in 1946, passed a resolution recommending that western Montana Soil Conservation Districts encourage improved cultural practices on Christmas tree lands. They requested technical assistance in woodland culture from cooperating agencies and encouraged the development of a marketing system designed to improve the quality of trees through a grading system with graduated prices. They were concerned with reports of buyers that in some markets the decline in the quality was reducing the demand for Montana trees.

The interest in the Christmas tree industry and the importance of maintaining high quality as expressed in this resolution resulted in the formation of a grading rules committee representing the industry and interested public agencies. The possibilities of grading were investigated and a grading system was developed.

The Northern Rocky Mountain Forest and Range Experiment Station, under the leadership of A. L. Roe, established research plots to test various cultural practices designed to improve Christmas tree production.

These studies are still under observation and will contribute additional information on management practices. Already they point out the need for other studies. For example, more information is needed on the possibilities on shearing to improve tree form and density. In the meantime the following general principles are recommended as a guide to better management.

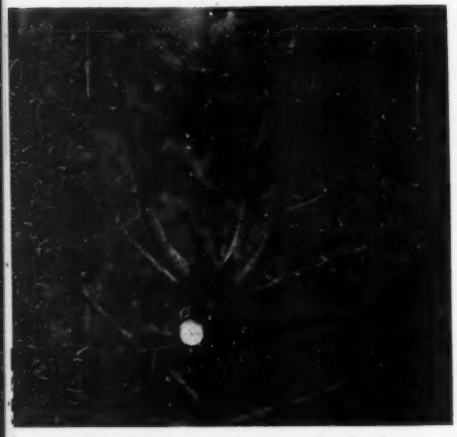
Thinning has for its purpose the regulation of spacing in crowded stands. Thinning should accomplish proper vertical as well as horizontal spacing. Thinning must be done carefully or the stand will be harmed rather than improved. A good rule

is to thin lightly and often.

Pruning is one of the most debated measures. Light to moderate pruning probably does not affect top development a great deal but it may give more space for crown development of other trees.

Weeding is the removal of trees and shrubs which interfere with the development of Douglasfir Christmas trees. Weedings should be done when the stand is young and the job can be cheaply accomplished.

Liberation Cuttings remove trees which have grown out of merchantable size for Christmas trees and other over-wood trees which are unmerchantable because of rot, crook, or other defect. These should be felled, girdled or poisoned to give space to young trees beneath.



All branches in the top whorl of a Christmas tree stump are erect

Stump Culture. By this means one or more trees are grown from the stumps of harvested trees. These new trees originate either from branches which turn up and develop into new leaders, or from adventitious buds. This practice may be very detrimental if done carelessly and if stump branches are left unattended. But when carefully applied stump culture has a beneficial and definite place in the growing of Christmas trees. Stump culture is best practiced where the tree is growing alone in an opening.

Regeneration. The usual and most important method for regenerating Christmas tree lands is by natural seeding. At least 4 to 6 well spaced trees eight inches or greater in diameter at breast height, should be preserved per acre to furnish seed for regenerating openings. Seed trees should be vigorous and full-crowned.

Planting. Frequently when seed trees are not present, or for other reasons, openings which do not regenerate very rapidly occur in the stand. Many of these need to be forested artificially for maximum production of Christmas trees. Planting of young trees is the most successful artificial method.

Damage to stands. Like any other crop, Christmas trees are subject to damage by various agents. Fire, insects, disease, weather and animals may damage or destroy Christmas tree stands. The grower must always be alert to protect his crop when protection is possible and practical.

In the Soil Conservation Districts' program, growing Christmas trees is considered good land use and a profitable woodland activity. Conservation surveys show that more than 50 percent of the land on many farms and ranches in western Montana is best suited to growing woodland crops. On natural, second-growth, Douglasfir sites, Christmas trees are a profitable crop for the farmer or rancher. The average annual return per acre for Christmas trees in Montana is approximately four times that for saw logs of the same species. Woodland sites, low in productivity for growing saw timber, are often the best for growing Christmas trees.

Cash returns from Christmas tree farming will vary from a few hundred dollars to a substantial part of the farm income. Because of the possibilities for annual harvest and the short rotation required to grow a marketable product, Christmas trees are a woodland crop that is most appealing to the farmer. It is often a family enterprise for which the returns on labor are high. Harvesting can be done after other crops are taken care of and little investment in special equipment is required.

Few records are available to indicate potential yields. An annual production of four or five bales per acre is considered conservative. According to A. L. Roe, in unpublished data, Northern Rocky Mountain Forest and Range Experiment Station records on one ticket showed an average yield of 13 bales per acre annually. This is considered a good return from cut-over lands that the farmer may have bought for around a dollar an acre.

Taxes and fire protection on these lands are around 15 cents annually. But the big money for the farmer is the return he gets for labor he puts into harvesting the tree crop. In good going, an experienced cutter can average 200 trees or 40 to 50 bales daily. Prices paid by the concentration yards have varied over the years. In 1955, concentration yards paid around $1.65 per bale.

(*Continued on page* 63)

This area is typical second growth Douglasfir valued primarily for Christmas trees

Currier and Ives print "The Road — Winter"

Christmas Wasn't Cozy

BY PEG KIENAST

WELL, it wasn't! We find ourselves flinching from the memory of last year's celebration, the sprayed artificial trees, the flamboyant ribbons, the old oaken bucket full of high glazed cards featuring red nosed reindeers and futuristic camels. Christmas used to be better, and we're going to try for the old way.

We are sure that every one of you had an upsurge of real Christmas feeling sometime during the holidays, whether brought on by the voices of children, reunion with parents, a clear cold night with the everlasting stars shining, or the prosy smell of dinner cooking.

But it slipped away, didn't it, into the eggnog, drowned out by comic records, talk of mink coats and Cadillacs if you are in that bracket; of ultramatic drive and taffeta if you are a notch lower? The in-betweeners, which is where most of us fall, came through feeling that "Hark the Herald Angels Sing" seemed to mean "Clean up on Christmas." Man the stores, shops and services! We hope the poor received the usual baskets, but here food wrapped in cellophane with refurbished mechanical toys on the side just doesn't seem to have the same heart.

What HAS happened to Christmas? Everywhere in the Christian world it is, above all, the children's holiday.

Almost every land has its own Christmas carols. The Christmas tree with its golden star, its lights and frost trimmed boughs is as much a part of Christmas as the Christmas song.

Perhaps that is where we got off the track. Perhaps we should first of all re-establish the fragrant, green and living Christmas tree. We'd like to say that if you have a home, have a *personal* Christmas tree. We don't insist on a yule log, hand culled from the woods, but do bring in a live tree, set it up in a corner of the family living room and have the children and neighbors gather 'round it. Don't settle for a dinky fireproofed tree perched on top of the television set.

Of course make a trip to town to join in the ballyhoo near the town's community center if you think you should go. Pay tribute to the enterprising folks who get up these community spectacles. Keep moving the kids along, enjoy the lights, the good natured crowds — then leave and go home and sit by your own tree quietly. Then evaluate the display you have just left, the merchant's association parading its wares, the bands blaring, the folksy politicians glad handing beneath the public tree. Enjoy it, just as you enjoy any other good show, but don't let THAT be Christmas.

Perhaps you have just seen the "largest tree in the state," the "larg-

(*Continued on page* 54)

Jim Woodruff Dam on Apalachicola River near Georgia-Florida line

THE BIG DAM FIGHT

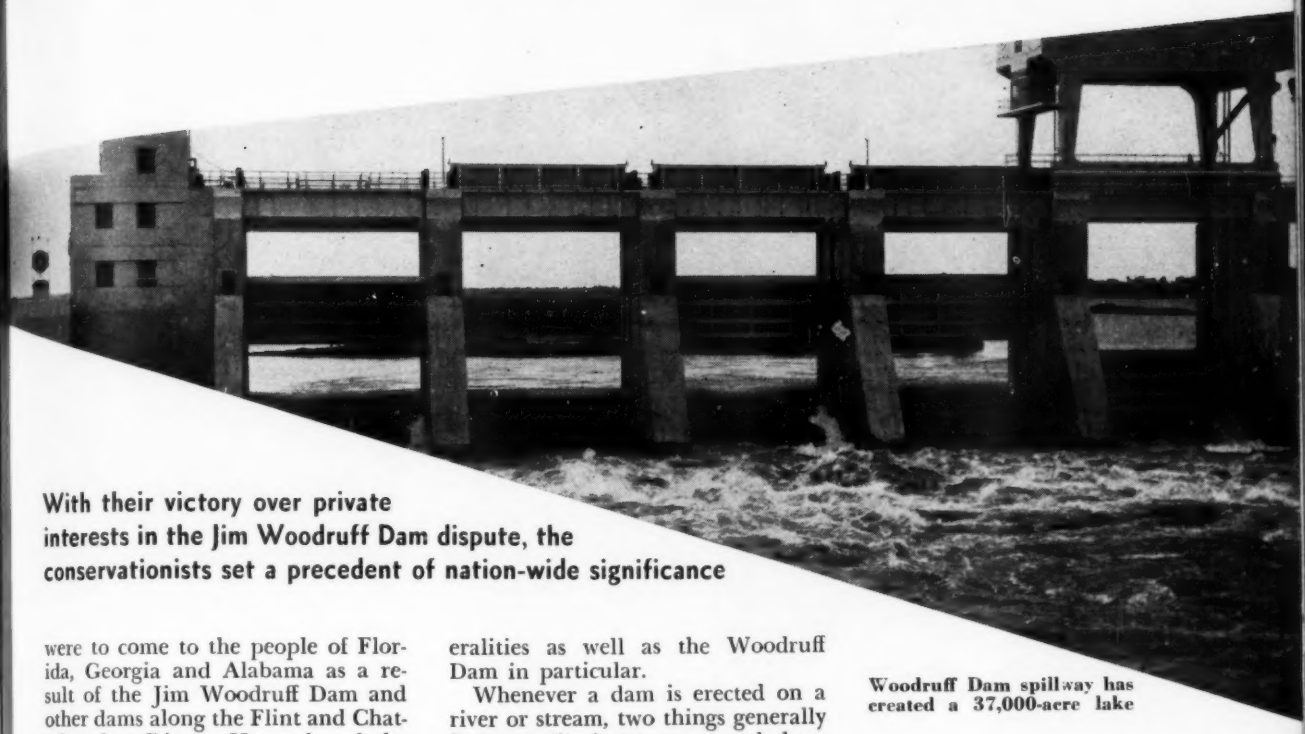
By CLEVELAND VAN DRESSER

BACK in September of 1947 the Army Corps of Engineers started to build a dam in the southeastern part of the United States. Nothing unusual about that. The Army Engineers are always building dams somewhere in America.

There was quite a hunk of taxpayer's money tied up in this dam, and before it is completed, which will be the summer of 1957, the public still will have been tapped to the tune of $46,380,000. The structure is located on the Apalachicola River practically on the Georgia-Florida State Line, and is known as the Jim Woodruff Dam, and as of October of 1956, was 95 percent completed.

The Apalachicola River is formed by the Flint River which flows southwest out of Georgia, and the Chattahoochee River, which flows southeasterly and forms part of the Georgia-Alabama State Line. The dam has created a lake 37,500 acres in extent with a shore line of 213 miles about evenly divided between Florida and Georgia. It is the key structure in a series of dams on the Flint and Chattahoochee Rivers designed to create a 9-foot channel clear to Columbus, Ga., (Phenix City, Ala.) on the Chattahoochee, and Bainbridge, Ga., on the Flint.

In a widely publicized affair last September 13, called the "Apalachicola River Celebration" held at Blountstown, Fla., some 20 miles below the dam, Col. Harold E. Bisport, chief of the Mobile (Ala.) district of the Army Engineers glowingly dwelt on the advantages that



With their victory over private interests in the Jim Woodruff Dam dispute, the conservationists set a precedent of nation-wide significance

were to come to the people of Florida, Georgia and Alabama as a result of the Jim Woodruff Dam and other dams along the Flint and Chattahoochee Rivers. He spoke of the 9-foot channel, of hydro-electric power and flood control. He had to mention flood control, as no dam can be erected by the Army Engineers unless flood control is one of its prime objectives. (Sometimes that objective gets a pretty broad interpretation.)

What Col. Bisport failed to mention at the Apalachicola Celebration was the two year battle that has been going on concerning the shore line of the Jim Woodruff Dam. This fight has been carried on between conservationists on one side and private interests on the other. At long last the conservationists have scored a victory—not a complete one—but a victory of sufficient size to warrant it being termed a significant national achievement.

What has been accomplished by the conservationists at Woodruff Dam, in this case the Florida Game and Fresh Water Fish Commission, can and probably will have an effect on six other huge Army Engineer dams in Texas, Oklahoma, Nebraska, Minnesota and Mississippi, as well as others to come. In short, the Woodruff Dam victory is a mighty step forward in the cause of conservation, because it sets a precedent for the treatment of the shore lines of man-made lakes in the future, not counting the six dams already mentioned.

To get the situation into proper focus, it is necessary to deal in generalities as well as the Woodruff Dam in particular.

Whenever a dam is erected on a river or stream, two things generally happen: (1) Areas are created along the shoreline of the man-made lake that are highly useful for waterfowl management. (2) Property along the shoreline rockets in value. It seems that everybody wants to live beside a lake, and when a body of water is created such as the 37,000 acre lake back of the Jim Woodruff Dam, thousands of people want a piece of its shoreline.

Woodruff Dam spillway has created a 37,000-acre lake

Land must be prepared to plant food for waterfowl

Back in 1946 Congress passed the Coordination Act which in effect stated proper recognition should be given wildlife in connection with any federal reservoir project. Just to make it clear what was meant by "proper recognition of wildlife values" was spelled out in the Flood Control Act of 1954 — part of which stated that the Secretary of the Army is authorized to grant leases in reservoir areas for such purposes (wildlife development) to non-profit organizations at reduced or nominal considerations in recognition of the public service to be rendered in utilizing the leased premises.

The 1954 act further states that preference shall be given federal, state or local governmental agencies and licenses or leases may be granted without monetary consideration to such agencies for the use of all or any portion of a reservoir area for any public purpose, when the Secretary of the Army determines such action to be in the public interest.

It was assumed, when construction started on the Jim Woodruff Dam that the "public interest" in

(*Continued on page* 56)

Women's role in the development of forestry has never been adequately recognized, but for 80 years they have helped advance forestry to the position of prestige it enjoys today

WOMEN in Conservation

By HENRY CLEPPER

SINCE the beginning of the organized forest preservation movement, dating from the formation of The American Forestry Association in 1875, women have helped develop forestry policies. In conservation education particularly have they been effective. In stimulating public interest in parks, in watershed protection, in fire control, and in many other phases of resource management they deserve a large share of the credit for the results accomplished.

By their vigorous support of basic legislation, both federal and state, they have helped lay an enduring foundation for the future of America. In short, women no less than men have effectively established forestry in this nation as a permanent way of life.

Strangely enough, the significant role of women in the development of forestry has never been adequately recognized. And unfortunately, it is not possible to do so in a brief article. Especially is it impossible to mention even a portion of women who during the past fourscore years have helped advance forestry to the position of prestige and influence that it enjoys today.

If, for every woman mentioned in the following paragraphs, the discerning reader will recall several of equal importance unmentioned, the omissions are not to be considered

Mrs. Gifford Pinchot, wife of the first Chief of the Forest Service, presides at a Baked Apple meeting in Washington

AFPI's capable Alma Deane Fuller

Librarian Martha Meelig, Syracuse

Mrs. Edna Crocker, Forest Service

as oversights or deliberate slights. The individual women named should be considered as examples or leaders of certain aspects of conservation, not as the sole participants in the movement's history.

A student of forestry history, especially of the era of its enthusiastic beginnings, cannot fail to be impressed by the number of women who gave so generously of their time and talents to the cause. A truly great lady of forestry, now all but forgotten except by the early generation of foresters, was the late Myra L. Dock of Pennsylvania. Her activities antedated those of Gifford Pinchot.

A botanist, Miss Dock became interested in forestry after hearing a lecture by Dr. Joseph T. Rothrock, now revered as the "Father of Forestry" in Pennsylvania. As early as 1895 she took a study tour through the Black Forest under the guidance of the eminent German forester, Sir Dietrich Brandis.

One of the first women to hold public office in forestry, she served on the Pennsylvania Forestry Reservation Commission for twelve years, meanwhile traveling extensively in the United States, Canada, and Europe to observe forest conditions. She was an eloquent lecturer, was the author of numerous articles on botany and forestry, and contributed frequently to *Garden and Forest* even before the turn of the century. She was a pioneer member and long active on the Conservation Committee of the General Federation of Women's Clubs.

Scientists

In 1910 the newly established Forest Products Laboratory at Madison, Wisconsin, acquired a dynamo of scientific energy in the person of Eloise Gerry. During the ensuing four decades, Dr. Gerry with her microscope made literally hundreds of valuable contributions to basic and applied research.

Her first investigations were in naval stores, directed toward prolonging the life and improving the yield of the resin producing southern pines. During the first world war, she worked on methods for selecting wood for the exacting needs of the aircraft industry. This research was resumed during the second world war when her abilities were utilized in a nonpublicized phase of wood structure dealing with little-understood defects in members used in training planes with the objective of preventing needless waste of scarce material.

In later years she specialized in foreign woods, an assignment of major importance to American industry dependent on imports. Retired in 1955, her long and useful career in forest science provides an inspiration to other women attracted to wood technology as a vocation.

Similarly, the late Miriam L. Bomhard, for twenty years an ecologist in the Forest Service Branch of Research until her untimely death in 1952, was a one-woman information bureau on forest and range ecology. In addition, she was the nation's foremost woman authority on palms.

Dr. Bomhard prepared the palm genera list for *Standardized Plant Names,* the botanist's Bible of nomenclature; and was joint author of the Forest Service's *Range Plant Handbook.* Moreover she contributed many papers to the scientific literature of forest and range investigations.

Miss Doris W. Hayes, currently classified as a conservationist in the Forest Service Division of Range Management Research, has devoted many years to the identification of western range plants. She is curator of the Forest Service's range plant herbarium. Having spent three decades in this highly specialized field, she is nationally recognized among botanists as an expert in the classification (taxonomy) of range vegetation .

Editors

For many years *American Forests* was not only the leading magazine devoted to natural resource preservation, but almost the only one of national circulation. During the period of Ovid Butler's editorship, *American Forests* was in the forefront of every important engagement for national and state forests and parks, for increased protection against fire, insects, and for the conservation of range lands, wildlife, soil, and water.

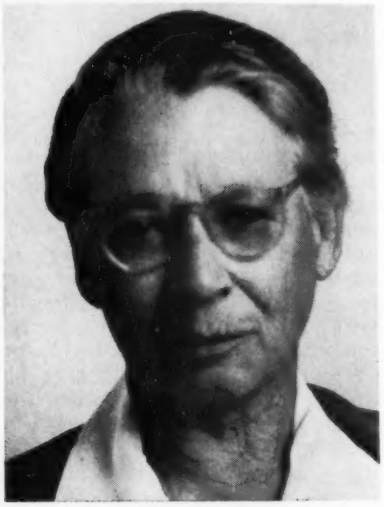
No less dedicated to the cause than Mr. Butler was a member of the editorial staff who helped make the magazine a force in public education. Miss Lillian Cromelin, a lady

of extensive knowledge of forests and related resources, was an editor of rare gifts who contributed inspiration as well as information to the readers.

The numerous books and bulletins published or sponsored by the Charles Lathrop Pack Forestry Foundation and its subsidiary, the American Tree Association, have enriched both professional and popular forestry literature. As editor and assistant to Tom Gill, Ellen Dowling aided in the editing of numerous technical bulletins, scientific monographs, and popular releases. Among those in the forestry profession who know her work, Miss Dowling is highly regarded as an editor of versatile talents.

Likewise, in the highly specialized field of research editing, Mrs. Agnes E. Moore of the Forest Service has contributed much to scientific literature. With the background of a science degree, she has responsibility for reviewing and editing manuscripts prepared by the research technicians in forest diseases.

L. Audrey Warren, of SAF



Dr. Eloise Gerry, scientist

Librarians

Before the main library of the U. S. Department of Agriculture absorbed the individual libraries maintained by some of its bureaus, the Forest Service had its own excellent collection and trained staff. Many old timers, as well as early readers of the *Journal of Forestry*, remember Helen E. Stockbridge, who helped make the Forest Service library a useful instrument in the development of forestry knowledge and its application in field practice. For years she contributed a valuable list of new publications to the *Journal*. Miss Stockbridge was one of the first forestry bibliographers in America.

Many of our accredited schools of forestry now have their own libraries with one or more staff members trained in library science. One of the largest of these collections is that of the College of Forestry at Syracuse, N. Y., where Martha Meelig is the capable librarian in charge. Her services to forestry extend far beyond the college itself. To illustrate, she too has for years contributed a monthly page of current literature to the *Journal of Forestry*.

Until her recent resignation from the main library of the U. S. Department of Agriculture to go to the University of Iowa, Frances J. Flick was a bibliographer specializing in forestry and related literature. She compiled the range management portion of current literature for the *Journal of Forestry*.

A professionally educated forester (Iowa State College), Miss Flick subsequently studied library science at Syracuse University. She is an authority on the Oxford decimal system of library classification, having done work on the system at Oxford University. She has prepared a number of bibliographies including those dealing with the economics of forestry, the forests of Latin America, and forestry research programs.

Popular Writers of the Forest Service

Among the truly interesting writers about trees and forests was Daisy Priscilla Edgerton of the Forest Service Division of Information and Education. Personally fascinated by trees that are unusual because of size or age, or that are associated with notable persons, places, or events, she assembled records over a long period of years. She was co-author (with Charles E. Randall) of the popular bulletin *Famous Trees*, published by the U. S. Department of Agriculture in 1938, the year she retired. It is the definitive work on the subject.

Mrs. Edgerton did much to popularize interest in forestry during a long writing career. Her early bulletin *The Forest, a Handbook for Teachers*, published by the Forest Service during the 1930's was widely distributed.

Mrs. Lydia Marie Heisley, a member of the Forest Service for four decades, was another pioneer in forest conservation teaching. She was the author of *Our Forests: What They Are and What They Mean to Us*, one of the most widely used publications ever issued by the service. Although she herself has been almost forgotten except by early forest officers, her booklet, *Cooking over the Campfire*, though out of print for many years, is still in demand. The Forest Service continues to get more than 5,000 requests for it annually.

Margate S. Kienast, an employee of the Forest Service before her retirement in 1956, was a big help to many women's organizations in the development of their conservation programs. Her advice was sought by numerous women's groups in the formulation of study programs. Before joining the Forest Service Mrs. Kienast was on the staff of *American Forests* magazine.

Secretaries

Mrs. Edna F. Crocker, who retired from the Forest Service in 1944, probably had more forestry history-in-the-making pass over her desk than any other woman. She was secretary in the chief forester's office for many years. During Gifford Pinchot's administration she was secretary to Overton W. Price. Early in Henry S. Grave's administration she became his secretary, and served in this position under William B. Greeley, Robert Y. Stuart, F. A. Silcox, and Lyle F. Watts, all of whom were chiefs during the service's

(*Continued on page* 52)

Reading About Conservation

By JACK DURHAM

THE singing that Sigurd Olson writes about in his book, "The Singing Wilderness," (Alfred A. Knopf. 244 pp. $4.00) is not an ordinary kind. You will not hear it from men's voices around a campfire, elemental and comforting though that may be. It is not to be described at all by melodies from any of the seven principal Greek modes (although the Dorian which is virile, energetic and proper for the perfect citizen might be chosen) nor, indeed, by notes of the 5-toned scale of ancient Oriental music.

It is true that it has a non-human quality. And that is fitting and proper. It is one of Mr. Olson's theses that man is not the measure of all things. But that does not mean that it is non-existent, although it is extremely difficult to hear sometimes. Once heard, the music of wilderness voices will never be forgotten.

You may have heard some of the voices no longer ago that the spring, when the geese were returning from the South. That is, if you happened to be in a quiet place away from city noises. It is almost certain that the voices of spring peepers lately drifted through your car window while you were waiting on a traffic-jammed bridge near sundown. And you recall the robins shrill song on crisp April mornings.

And if you live in the Old South, you know by heart the melody the whip-poor-wills sing in the pine woods on summer nights.

These are some of the voices. But only a few of the more familiar ones around home. Other voices, other places. Mr. Olson writes about those of that rugged wilderness of rivers and lakes and forests known as the Quetico-Superior country that lies across the U.S.-Canadian border north of Minnesota and the small mining town of Ely, where the author lives.

"The singing wilderness has to do with the calling of loons, northern lights and the great silences of land lying northwest of Lake Superior," Mr. Olson writes.

"It is concerned with the simple joys, the timelessness and perspective found in a way of life that is close to the past. I have heard the singing in many places, but I seem to hear it best in the wilderness lake country of the Quetico-Superior, where travel is still by pack and canoe over the ancient trails of the Indians and voyagers.

"I have heard it on misty migration nights when the dark has been alive with the high calling of birds, and in rapids when the air has been full of their rushing thunder.

"I have caught it at dawn when the mists were moving out of the bays, and on cold winter nights when the stars seemed close enough to touch.

"But the music can even be heard in the soft guttering of an open fire or in the beat of rain on a tent, and sometimes not until long afterward when, like an echo out of the past, you know it was there in some quiet place or when you were doing some simple thing out-of-doors."

Hunter, fisherman, white water canoeist, Mr. Olson has traveled hundreds and perhaps thousands of miles in the vast wilderness of the North Woods. He knows the down-to-earth survival problems of leading a party through trackless forests; and is as practical as a frying-pan. And during the quarter-century of his wilderness work, he has discovered that he is not alone in his listening; that almost everyone is listening for something; that the search for singing goes on almost everywhere.

He says that it seems to be a part of the "hunger that all of us have for a time when we were closer to lakes and rivers, to mountains and meadows and forests, than we are today. There is a restlessness and an impatience with things as they are that modern life with its comforts and distractions does not seem to satisfy . . . When the pace stops, we are often lost; and we plunge once more into the maelstrom hoping that if we move fast enough, somehow we may fill the void within us."

Mr. Olson says that even the search is rewarding, because during the adventure we tap the deep streams of racial experience that somehow still remain buried within us and which civilization has not measured but only diverted with make-shift dikes and sand-bags of custom and force.

Whether he is writing about the twilight reaches of a virgin forest, the miracle of returning spring to the ice-bound North, the fecund world of summer lakes and swamps or the remote solitude of a small forest pool, Mr. Olson's voyage is a rewarding adventure in revelation. The reader grows in perception of nature's ways, and under the tutelage of the Bourgeois Olson—as the old French voyagers centuries ago called their guides — he comes to understand with Olson's own mentor, Thoreau, that "in wilderness is the salvation of mankind.' '

Here is a book for the young in spirit. It has the day-light view all over it.

Structurally the volume is a series of essays, with the unified theme of that search for the singing voice of nature. It is an apt metaphor. Not long ago a famous German geologist used the same analogy in describing the values inherent in the discipline of geology. Hans Cloos, in his absorbing "Conversation With the Earth," thought that geology was the music of the universe.

Although subjective in style, Olson's book is solidly grounded; and many of the essays reflect the author's early training as a geologist. But it is the man who brings together the various views of the earth's sciences that is worth listening to. Today the name given is ecologist, in the older day it was naturalist.

Some may be found to object to the subjective approach adopted by the author as he travels through the turning seasons. They may be answered by saying that fortunately Mr. Olson is not afraid of his feelings. Nor is he fearful, as so many modern writers are, about communicating his love for the outdoor world. It is true that there is always the risk of an occasional lapse into sentimentality. But that is a risk that must be taken; and it is one that all of the great nature writers have never completely avoided. Only the bizarrely critical will discover any such lapse in Mr. Olson's fine book.

For in the end Mr. Olson is writing for human readers. He is trying to say that this is indeed a sweet world if only you move out of the concrete jungles and spend a little effort and imagination in discovering it. It is a difficult thing at best to communicate to the citizens of our machine-made world the sense

(*Continued on page* 59)

Since 1952, the Department of Forestry at Alabama Polytechnic Institute Agricultural Experiment Station at Auburn, has been engaged in research directed toward a better understanding of the heavily cropped soils in forest tree nurseries — and the establishment of soil management techniques that will produce more and better seedlings for the tree planters of the southern pine region. The man responsible for this little known but highly significant program of research, Wilbur B. DeVall, head of the Department of Forestry, is here interviewed by Erle Kauffman, former editor of American Forests, and the results of the four-year study, along with its significance, are presented nationally for the first time. The photograph at right was made when Mr. Kauffman visited Mr. DeVall (on right) at Auburn this fall.

NO MORE

An Interview

By ERLE KAUFFMAN

With

WILBUR B. DE VALL

Head, Department of Forestry

Alabama Polytechnic Institute

Quality seedlings in numbers sufficient to satisfy all tree planters is the promise of soil management techniques developed at Alabama Polytechnic Institute

Q. They are saying in the South, Mr. DeVall, that if techniques in the management of forest tree nursery soils developed at Alabama Polytechnic Institute are successful in widespread application, seedling shortages will be a thing of the past. How realistic is this estimate?

A. What we have accomplished in our research at Auburn is a system of scientific soil management that should, under ideal conditions, nearly double the number of plantable trees in most nurseries. Whether this will bring supply in balance with demand depends upon a variety of factors, not the least of which is the trend of demand.

Q. Well, let's take the trend as we see it now. Seedling production in the South was 600 million trees in 1956, perhaps 150 million short of requirements and about half of the "better than a billion" seedlings estimated as needed by the fall of 1957, if you include soil bank program plantings. What can the Auburn system do with this challenge?

A. If you mean can nursery production be increased from 600 million to a billion trees, the answer is yes—the determining factor being the degree of concentration nurserymen give to the building and maintenance of optimum soil fertility in the seedbeds. If what we now know about nursery soil management is applied, the South's existing forest tree nurseries should have little trouble producing up to a billion plantable seedlings within the next 12-month period.

Q. Without expanding present nursery areas?

A. By utilizing present cultivable areas and seedbeds, yes.

Q. And this can be done by the fall of 1957?

A. Your answer will be found in the progress of existing nurseries in initiating soil management programs. How far this has gone, I am not prepared to say.

Q. But programs are being initiated?

A. Oh, yes—and actual production in an interesting number already has been increased by as much as 50 percent. Furthermore, here at Auburn better than 35 nurseries have taken advantage of soil testing services available in our laboratory, which is a first step in setting up a program. There are only 41 nurseries now operating in the South, you know —27 public and 14 private.

Q. Which means that roughly 90 percent are on the road to producing more and better trees.

A. I think you can say that, yes—if you include all stages of development.

Q. In other words, a cure for our perennial seedling shortage is in sight—if not here?

A. In sight, certainly, where foreseeable demand is concerned.

Q. I realize, Mr. DeVall, that your work has been in southern pine—that your techniques have been applied only in the South. But certainly there must be a national angle to

these accomplishments – your research findings must be of considerable value to other sections of the country. If you agree, how would you appraise this worth?

A. Scientific management of forest tree nursery soils is a relatively new technique. For this reason any substantial contribution to a better understanding of these heavily cropped soils should be extremely beneficial to researchers and nurserymen everywhere. The fact is, the first nursery soil testing of record was in Wisconsin. The problem, after all, boils down to one that is more or less universal – that of judicious use of fertilizer and soil amendments.

Q. So wherever he may be, the man who plants trees stands to benefit from your program?

A. Yes, unquestionably, to the extent the experimental data we have accumulated and the technical information we have assembled can serve the nurseries that serve him. Professor Jack T. May, who has had more to do with research at the Auburn nursery than anyone else, likes to describe our effort here in these words: "When a landowner pays out around $15 a thousand to plant trees on his land, he is entitled not only to stock that will live—but live vigorously." To give the man who plants trees that kind of stock –and in good supply–is indeed a basic aim at Auburn.

Q. Now, sir, you have already indicated that the great bulk of southern nurseries have soil management programs, based on Auburn techniques, in early stages of development. From other sources, I am told that the men responsible for the tree planting phase of the Soil Bank Act are counting heavily on this fact to help them supply a growing stockpile of contracts signed by southern farmers who have decided to convert to trees, under the provisions of the act, land now low in row crop potential. Since this is both a tribute and a challenge to your soil management system, would you care to comment on it?

A. Well, I think I have answered that. It is a question of how far state and other nurseries can go with soil management programs, plus other factors. For example, there is the problem of seed supply –good seed, that is. There is the matter of water, of soil and plant diseases, of varying shades of soil fertility to work with. Each nursery will have a different set of answers to these and other questions, which in some instances can be translated into an effective management program simply and with dispatch, but which in others may require several years.

The soil bank people recognize this, as do state forestry officials. Indeed, it was at their request that we agreed to make Professor May available in an advisory capacity to assist state and other nurseries in their production speed-up. Furthermore, the several new nurseries that are being created in the South with soil bank money will have the benefit of his counsel. Finally, and as an excellent yardstick of current interest, the facilities of the soil laboratory at Alabama Polytechnic Institute are being worked overtime making more and more soil tests for more and more nurseries.

Q. I gather, then, that the soil bank program has been good for nursery soil management?

A. It has been a good stimulant, yes. But there is another way of looking at it: without the techniques of scientific soil managment, a lot of soil bank farmers would be without seedlings in 1957 and 1958.

Q. Your point is well made, sir, if we are to judge from what seems to be perennial shortages in tree seedlings. And this raises another question–why we are just now doing something about our nursery soils when we have been plagued by these annual shortages since World War II?

A. Probably the main reason has been lack of incentive. Only in recent years has demand for seedlings made their production a large-scale operation–and one, incidentally, beset with problems that dwarf those in most other fields of forestry. Some early research by nursery managers brought improvement in the administrative phase of the operation, but by and large the vital question of nursery soil management was bypassed, no doubt because the nurseries were not equipped for research of this character–nor did they have the personnel with technical knowledge necessary for scientific investigations. So we have muddled along doing the best we could with a system admittedly i n a d e q u a t e and wasteful.

Q. And what, exactly, was the incentive that finally changed this–that started you gentlemen at Auburn on the soil research program?

A. A number of things, with emphasis on our concern over the failure of forest tree seedling production in Alabama to keep abreast of skyrocketing demand. Millions of dollars have been spent to encourage farmers and other landowners to add to the forest economy of the state and the South by turning idle or marginal acres into tree farms, and it seemed a bit ridiculous that after a highly successful selling job we should fall down on delivery of the product–the seedlings. We had to create more nurseries, an expensive undertaking–or we had to produce more trees in the ones we had.

Q. So you chose the latter approach?

A. Yes, since at Alabama Polytechnic Institute the Department of Forestry is a part of the School of Agriculture and Agricultural Experiment Station, we logically took the agricultural point of view–that in farming, soil management is the key to success.

But also we had made some initial investigations which disclosed that out of every 90 pine seeds planted in nursery seedbeds, only 28 plantable seedlings were obtained – and that eight of these died a year after planting. Something very definitely was wrong with this picture and we at Auburn were convinced that we

SEEDLING SHORTAGES?

would find it in the soils of the seedbeds producing the seedlings.

Q. As I understand it, you have altered this ratio rather dramatically with your soil management techniques.

A. Yes, we have upped the plantable stock from less than 30 percent to better than 50 percent – one seed out of every two planted now produces a plantable seedling. And survival is vastly improved.

Q. In other words, while stepping up output, quality of the seedling is also being improved.

A. That is right. In fact, in the long run this is perhaps our most promising development. Not only does it point to greater economies in planting due to increased survival, but faster and more vigorous growth adds up to fatter eventual profits for the planter. The effect of this on the future forest economy of the region could be rather exciting, wouldn't you say?

Q. I certainly would. And it also suggests that this quality-building phase has an increasingly important place in your research plans. Would you care to elaborate?

A. You must keep in mind, of course, that what we have accomplished is the basic fundamental work. What we have is mainly priceless experience and a considerable store of knowledge, not the least important of which is an extensive record on nursery soils throughout the southern states. Thus we can move forward with greater clarity of purpose—and one thing we very definitely propose is to add to our program research on controlled pollenated, genetically superior pine seed, a major forward step in the search for quality in seedlings.

Q. Who, by the way, pays for this research—the A. P. I. Agricultural Experiment Station?

A. At present, yes – but the industries of Alabama helped initiate it. In fact, it was the Alabama Forest Products Association that raised funds – better than $5,000 – to get the program under way.

Q. Now, Mr. DeVall, I gather from what you have outlined that we are dealing here with an exacting science —and I am wondering how we can describe for the benefit of the average reader just what happens in a nursery when your management techniques are applied?

A. Floyd Cossitt of the U. S. Forest Service, one of our top nursery authorities, recently rather uniquely described a forest tree nursery as a "specialized farm, requiring a fertility level from three to five times higher than the normal farm." As a further measure of this level, he set at $3,500 an acre the cost of producing a crop of trees, which certainly is a yardstick most people will understand and appreciate.

Now consider that the natural ranges of the different southern pines vary widely, as do the soils in which they grow. Shortleaf pine, if you would like an example, grows naturally in the sandy loams of Florida, the heavy silty soils of eastern Oklahoma and the red clays of the southern Piedmont. To blueprint techniques and practices designed to maintain the desired level of fertility for this – and other – species in a given location is, obviously, a complex assignment. Yet, that is exactly what we are doing at Auburn.

Maintaining the proper level of fertility is not the whole picture, however. The nursery under good soil management will develop and hold a stable and workable soil structure and at all times harmful soil organisms will be under control. As you know, present nursery practice—nurserymen call it 1-1 rotation—keeps one-half of the cultivable area in tree seedlings and the other half in soil-building crops such as cowpeas and vetch. This rotation helps control epidemics of harmful organisms, and the legumes also serve as a source of organic matter and nitrogen.

Q. How is this rotation affected by your new management techniques?

A. We are giving a great deal of attention to cover crop rotation—and there are signs pointing to its possible eventual elimination. Our reasoning is about this: if all instead of half of the cultivable acres in a nursery are put to growing trees, the number of seedlings produced at the end of the year would be doubled. We have developed techniques which, I think, will make 2-1 and 3-1 rotations routine procedure, depending upon the pressure of demand. That is, a nursery would produce two or three consecutive crops of seedlings before alternating with cover crops.

Q. Would you consider a 3-1 rotation as maximum procedure under this plan?

A. Not necessarily, although at this time it is probably the maximum I would recommend. But the fact is, there are seedbeds at the Auburn nursery that have been in continuous production since 1951—and very successfully, I might add.

Q. One more question on this, Mr. DeVall—am I right in assuming both the 2-1 and 3-1 rotations are out of the experimental stage and in more or less general use?

A. Well, I wouldn't say they could be classified as general practice, although I am told some of the state nurseries in the South girding for anticipated soil bank demands are on a 2-1 rotation, with a number planning to add the third year if necessary. Frankly, if they are given the right type of management, I see no reason why some nurseries cannot produce indefinitely without rotation, if the need is great enough.

Q. And can "the right type of management" be defined?

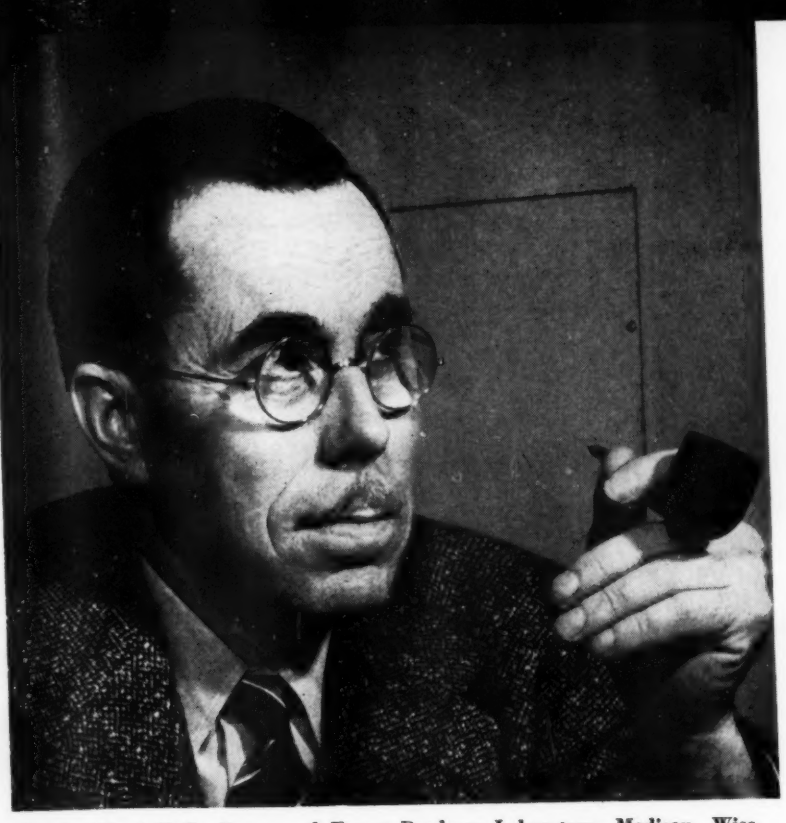
A. I think so, yes. Just hold in mind that when you eliminate cover crops you also eliminate sources of organic matter. This means you have to substitute—and at Auburn we have successfully substituted sawdust. Fortified with a highly refined system of providing fertilizers or nutrients, sawdust has been used continuously in our seedbeds since 1951. Actually, it is playing a dual role, since in the Auburn experiments sawdust also is used as a mulch or seedbed cover, with excellent results.

Q. This suggests that sawdust has become the key to your management techniques?

A. In many ways, that could be true. If you know when to use it, how to use it and in what proportion, you have your management situation pretty well in hand. But, of course, there are many other factors. The well-managed nursery, for instance, will also be on top of the problem of disease and insects. At Auburn, we have found an effective control for damping-off and root-rot in methyl bromide, a poisonous gas which must be applied under gas-proof cover. Incidentally, it also is one of the few chemicals known to kill nut grass, a serious nursery pest. In general, however, we try to control disease by good soiling practices.

Important also to the well managed nursery is irrigation, or water

(*Continued on page* 58)



Dr. J. Alfred Hall, director of Forest Products Laboratory, Madison, Wisc.

UTILIZATION... Today and Tomorrow

In the hardwood field the problem is to find outlets for the surplus of poor materials, so that better forestry practices may be stimulated and the quality of wood produced improved

EACH succeeding inventory of America's forests discloses a dwindling supply of premium quality timber and an increasing volume of inferior species, mostly hardwood. Better use of these low-value trees, as well as the wood residues from present logging and milling practice, would open a vast storehouse from which to supply much of the future wood requirements of the nation. Furthermore opportunities to market low-value species at a profit might stimulate better forestry practices on millions of acres and ultimately increase the supply of high-quality timber.

In 1957, The American Forestry Association will provide a forum for discussion of present and future opportunities for improved utilization. Special articles, each dealing with a specific phase of the problem, will be featured in AMERICAN FORESTS. The climax will be a conference of all industrial, educational, and public agencies with an interest in the subject. This meeting will be held at the Loraine Hotel in Madison, Wisconsin, from September 30 to October 3, 1957, and will include tours of the Forest Products Laboratory and other nearby points of interest.

A recent address by Dr. J. Alfred Hall, director of the Forest Products Laboratory, at Madison, Wisconsin, serves as an admirable starter for this series. Dr. Hall's address, "Opportunities and Problems in Utilizing Wood Products in the Southern and South Central Forests" was presented at the annual meeting of the Society of American Foresters at Memphis, Tennessee. Extracts from this address are presented here:

"Since we are meeting in the hardwood capital of the world . . . it is appropriate, if not mandatory, to consider the hardwoods.

"Essentially, the hardwoods situation in most of the South, as well as in other important hardwood regions, is characterized by poor quality of growing stock and under utilization. I assume you are all aware that about half of the total area and net volume in southern forests are hardwoods, that the volume of hardwood cull trees exceed one-third of the total hardwood growing stock, and that growth of hardwoods is far greater than the harvest.

"Hardwood utilization for most of the conventional products that have been made from hardwoods—lumber and veneer—has led to what is pretty largely a high-grading operation, with the resultant accumulation of a heavy overburden of low-grade trees and unwanted species left over from previous cutting. The core of this management-utilization problem is the development of uses and mass markets for hardwoods that are less choosy of quality and species and that will: (1) facilitate the removal of the present heavy concentration of poor stuff, the first step in rebuilding the growing stock and restoring the productivity of our once fine hardwood forests; and (2) permit the removal, without heavy capital investment, of the scrub hardwoods that have invaded lands best suited to pine. . . .

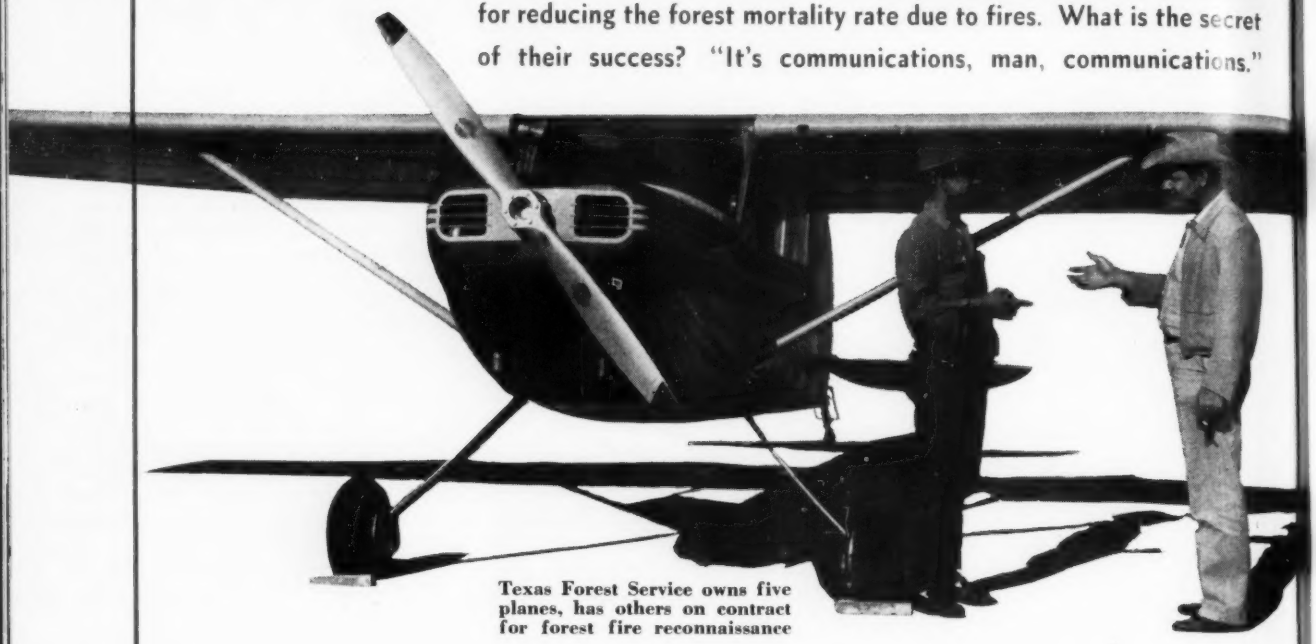
"Improvement in the quality of the wood produced on predominantly hardwood sites would soon bring growth and harvest into better balance. I don't see any indication of a slump in the demand for good hardwood lumber and veneer that is produced in quantity at a reasonable price. Production has been rather steady at around four billion feet for the last 10 years, and there is no reason to anticipate any major changes in the demand for good hardwood lumber and veneer.

"The problem, therefore, is to find outlets for the surplus of poor material so that we can move toward better forestry and improved quality in our hardwood forests. . . .

"At the laboratory we have been learning how to cut veneer from hardwood species and grades not previously used for veneer. We have also had some success in up-grading low-quality hardwood lumber with paper plastic overlays that mask defects, improve stability, and provide a good paintable surface. . . .

(Continued on page 55)

The airborne Texas Forest Service has chalked up an amazing record for reducing the forest mortality rate due to fires. What is the secret of their success? "It's communications, man, communications."



Texas Forest Service owns five planes, has others on contract for forest fire reconnaissance

PLANES OVER TEXAS PINES

By C. C. SPRINGFIELD

TFS planes help law enforcement officers catch fire bugs. If pilot notices a man leaving a "set," he advises the office by radio, then keeps man under observation

THE Texas Forest Service, day and night guardian over some ten million acres of commercially valuable pine timber in east Texas, has been up in the air over fires for many years — ever since it took on the task of supervising and improving the forests.

It wasn't until five years ago, however, that the Forest Service actually got off the ground and began fighting fires from the air with planes of its own.

Now, it wouldn't do the job any other way, so successful has the use of planes been during the burning season. Needless to say, the use of planes has brought down the ravages of the forest fires to an astounding extent.

Not that fires aren't still occurring in Texas' pine forests. They are. In 1955, there were 491 fires, not a small number at all. The surprising fact, however, is that the fires were spotted so quickly that fire crews were able to get on them before they got a head start. Because of the speed with which the crews arrived, the average loss was only seven acres per fire.

This low loss was achieved despite the fact that, under specially favorable conditions, one fire destroyed 300 acres near Huntsville before it was put out.

Planes—and the added speed of communications they afford—are responsible, say the foresters. Another thing planes are doing is that they are taking the hearts out of chronic fire setters. Even running a few out of the country.

For example, a couple of years ago, in two and a half days, 20 fires were spotted and put out on a 40 acre tract of land near Conroe. Through, of course, the diligent use of a spotting plane during the hours the firebug was at his work.

In addition, the planes radioed information to the main Forest Service station south of Conroe, which information was forwarded instantly to the radio-equipped jeeps and tractors on the scene, enabled the fire fighters to get hotter on the heels of the incendiarist than the fires themselves.

They got plaster casts of his footprints and of his horse's hoofs. They almost caught him in the act as he rode from here to there and made his sets. All because a spotter high above him was able to keep an eye on him.

He'd ride along and, when he thought the coast was clear, would make his set. A few minutes later, the pilot would radio in the location—to within a quarter of a mile or closer. The fighters would arrive and a jeep would pull its plow to dig a fire lane. Soon the fire had burned itself out.

By that time, the arsonist would have set another fire, the plane would have located it and soon, it, too, would be out. After a couple of days of this, the arsonist got the idea and withdrew.

Now J. M. Pollard, a Forest Service employee in charge of educating the public against fires and investigating such fires, took over.

Pollard, a Special Texas Ranger, determined the identity of the guilty party through an intensive investigation. Still, he had no absolute and positive proof. No one had actually seen the man set a fire.

So, a month later, when he met the man, Pollard took him aside for a talk.

"We've got you tied up mighty tight," he told the man. "We know you set those fires. And we feel we can get a conviction. Still, as you know, the Forest Service would rather break a man from the habit of setting fires in a nice way than it would by getting tough and sending

Pilots can spot forest fires within a quarter of a mile by using the map with a grid

Forest fire spotter in a tower reports his findings to service headquarters via radio

When a pilot reports a fire, the headquarters staff goes into action. The area is pinpointed on the map, and the garage is alerted to get equipment ready

There are 81 towers on 10 million acres protected by Forest Service

him to the penitentiary. So, if you'll cooperate, we'll go light."

After some hedging, the man finally admitted he'd set the fires to get even with the land owner who had refused to lease the land to him for grazing.

"Have you learned your lesson?" asked Pollard.

"You bet," was the reply. "In fact, I'm moving clean out of this country. Got no room here to graze my cattle and besides, you people have just been too hot on my back."

He was as good as his word and left, which satisfied the Forest Service. They had kept from making an enemy, one who might return later and deal them a lot more misery; and they had also educated the man insofar as the extensive damage he might have needlessly inflicted.

As a matter of fact, the Forest Service does most of its fire fighting through education. They advertise on the radio regularly concerning the great damage caused by fires. They issue pamphlets by the hundreds of thousands. Day in and day out, department members are visiting rural schools, FFA Chapters, farmers and stockmen, emphasizing the needless cost of uncontrolled forest fires.

It might be said here that the Forest Service has no objection to a man's burning off his own property—so long as he controls the fire. As a matter of fact, the Forest Service itself sometimes practices controlled burning to remove undesirable hardwood from pine tree forests. The hardwood prevents the pines from reseeding.

"Research has shown that hardwoods can be controlled in early stages of development and kept under control by the proper use of fire at a cost lower than any other known method," says the service.

As for the use of planes, they've been in use steadily since 1951, and are practically a new weapon.

They are a far cry from the one-man, horse mounted fire fighters of 30 years ago. Then, those lonely fire fighters patrolled the forests for weeks, climbing spike-studded trees here and there to get a view of the country-side. They were armed with only a rake. Unless they were lucky enough to catch a fire just starting, there was little they could do.

After being spotted by a plane, arsonist is arrested by officer

Later, the state set up 81 lookout towers in its six districts. Spotters in these places could scan miles and miles of forest. Still another advance was made when the towers were equipped with telephones. However, the telephones failed many times at critical moments, were poor conductors of talk and often were hampered because they hooked onto party-lines that were busy with conversation most of the day.

Consequently, the next most important step came when short-wave radios were installed in the towers and at the main station. Now, it was possible to get men to a fire on the double.

Then came the big debacle that brought planes permanently into the picture. It happened in 1948, when nearly all the forest between Conroe and Cold Springs was burned.

That was a time when everything favored fires. It had been dry for a long time. Winds were high. Many backwoods people living around Conroe were addicted to the idea that fires were beneficial — that they aided hunting, that they eliminated ticks, insects, snakes and so on, that they restored fertility to fields, made the grasses grow better. In addition, many of these backwoods dwellers liked to set fires just to see the fire fighters work.

So, the fires flowered. And in a little while, they'd gotten beyond control of the limited resources of the regular crews. Then private planes were hired to hunt new sets. The government sent planes and helicopters to aid the cause. The acrid smell of smoke filled the area day and night for several months before conditions returned to normal and the fires were brought under control.

One result was that the Forest Service began attempting to get planes to spot fires. (They have five planes today in their six districts and have leased several other planes which are flown on a contract basis.) The big fire of 1948 also caused some of the bigger landowners to buy fire-fighting equipment—jeeps, plows, bulldozers—and to set up crews of their own.

So, finally, the Forest Service got off the ground in its fight to prevent fires.

Not long ago, I took a trip to see how the spotter works. I rode with R. H. (Buddy) Haynes, who flies

out of Huntsville. As we soared along, the horizon was just a foggy void to me with black timber in the background. I raised one "smoke," but Buddy told me it came from a sawmill. I kept looking as we moved along at 110 miles an hour but could see nothing.

Buddy punched me. "There's a smoke," he said, "about 20 miles ahead."

While I searched for it—vainly,—Buddy went to work. He pulled a map from beneath his leg and folded it to a certain section. "Here's where we are," he said, touching the map, "and there is where the smoke is."

Then he put a small piece of celluloid on the map. It was marked with lines and letters. He called it a grid. "This is how we pin-point our fires and tell the fire fighters how to get to them," he explained.

He picked a small mike off the instrument board.

"Two-Nine Charlie to KKD 598," he said, announcing himself and calling the station at Conroe.

The reply came back: "Conroe to Two-Nine Charlie, go ahead."

Haynes: "Conroe, you've got a ten-one (meaning a fire) at 340 Baker Two."

Conroe: "Any landmarks to go by?"

Haynes: "Yes, it's almost due south of the gravel pit by the railroad. Okay?"

Conroe: "Ten-Four (this being an acknowledgment), we'll handle."

Buddy hung up his mike and turned to me. "They'll have it stopped in an hour."

"How can they get someone from Conroe there that quick?" I asked.

"The crew won't come from Conroe. They're lots nearer. See, we've got 12 two-man crews at strategic spots over our district. Conroe will radio the closest unit and they'll be on the spot shortly, carrying whatever tools they need—jeep and plow, tractor with bulldozer blade. Oh, they'll get it quickly."

On we flew.

Buddy spotted another smoke, looked it over carefully. "That's one from yesterday," he said. "Nothing but a little smoke left. Still, I wanted to check it to see it wasn't breaking out again."

As we flew along, Buddy told me about the man he'd seen leaving a fire one Sunday. After radioing the location, he advised Pollard, the Special Ranger, that he thought that he, Buddy, could help Pollard intercept him. Sure enough, a few minutes later Pollard had stopped the man. It had been easy. Buddy just flew along over the car, gave Pollard directions and that was that.

Because of extensive communications systems, Texas Forest Service is able to notify crews to move on the fires before they get a head start

"It's communications, man, communications," explained Haynes.

The service is expensive. Firefighting, says the Forest Service, takes up five-sixths of the service's budget. But, it's worth it.

Says the service: "Through adequate fire protection and good forest management, the commercial forest lands of Texas will yield several times their present production. Texas has tremendous mineral wealth, but this is subject to eventual depletion. The state's wealth in timber, however, is renewable and can be doubled in a decade through good management and reduction in fires."

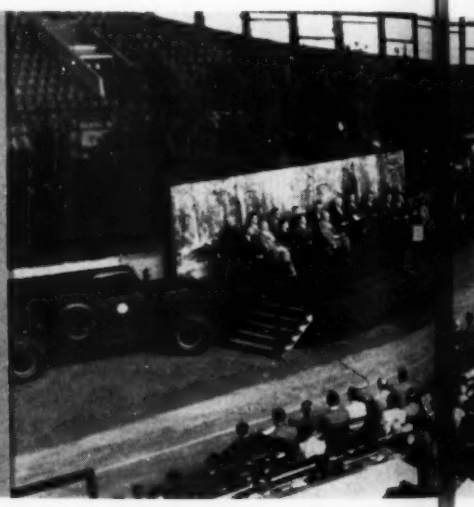
That's why Texas forest-farmers, both private and public, are highly in favor of the plane's use in fighting forest fires.

Forest fire losses have been reduced by an astounding extent ever since the Texas Forest Service got off the ground and began fighting fires from the air with planes

NORTH CAROLINA FIRE MEETING

By JAMES B. CRAIG

Tarheels plan all-out effort to curb state's 35 million dollar annual forest fire loss. Militant action revealed at county level



AT THE conclusion of the Southern Forest Fire Prevention Conference last April opinions differed on how the interest generated at New Orleans could be harnessed and put to work most effectively. While all agreed this new interest must not be dissipated, there were two schools of thought on the direction the effort should take. A minority group said, "With 29 million acres of southern woodlands still without any form of organized fire protection and in view of continuing heavy fire losses, the time is ripe for a southwide Fire Task Force to take fire prevention right to the people. Progress as coordinated by a group of this nature will be faster, more uniform, and make sure interest doesn't lag." A majority group rejected this proposal. It said in effect, "We are honestly leery of any more organizations or any more coordination. This conference has now served its purpose and has done a good job. It should now be disbanded and the followup job turned over to the states where it belongs." That was what was done.

Today, nine months later, more and more people are asking, "How is this followup job getting along?"

Well, its probably too early yet to say flatly whether either of these two schools of thought were entirely right. Not all states have as yet inaugurated followup programs. But there is certainly encouraging progress to report in those states where aggressive action has been started. A followup fire meeting in Alabama drew 2300 people. Mississippi and Arkansas drew attendances of around 700 each. Meetings are planned now for Florida and Texas. Last month the Governor's Fire Conference in North Carolina drew 2400 people with some of the county delegations arriving by chartered buses and with banners waving. These county delegations indicate they are going to follow the example set by Alabama where John Raeburn, Keep Green chairman of the Alabama Forest Products Association, teamed up with county extension agents to hold followup meetings in 66 Alabama counties on October 11, 12, and 13. These meetings were attended by a total of 8,000 people.

One of the outstanding developments of these state meetings to date has been the tremendous interest that has been churned up at the local level. The North Carolina meeting last month is a case in point. Good as the prepared papers were at Raleigh (and they were all good), the real fire and decision at the meeting was displayed by the people themselves when they were permitted 20 minutes by Chairman Roger Wolcott to speak from the floor.

One delegate said, "About 50 of us organized in my county and came here in a chartered bus. As we see it, this is a local problem and we've got to lick it on that basis. The state and federals can help us but only up to a point. Now, as we see it, we've got to get more help from our county commissioners. Maybe a couple of us will run for the job although we've never been in politics. But even beyond that, we see this as basically a problem of neighbors getting together. My neighbors can help me protect my woodlands a whole lot better than any state officials. The sportsmen are interested in this we've found and in one case they banded together and formed a little social group to go hunting and fishing together and to throw a feed every so often. And you might not believe this, but fires have dropped off just since this group was formed.

A Halifax County delegate said, "We're not passing the buck on this to anybody. This is a local job and we're going to lick it on a local basis."

Reported another delegate, "Publicity groups alone are not enough. Local chambers of commerce or similar action groups must form the core of a determined action program in each county. That's how we intend to do it."

Another delegate demanded that his county commissioners "stand up and be counted." The delegate said he had put the bee on his commissioners to be present and he wanted to find out if they were functioning. They weren't present—at least at that moment—but many commissioners, sheriffs and other law enforcement officials were.

A former extension agent reported that in his opinion the "clergy should do more in helping to scotch the fire menace." He urged the clergy to "hold off a little on the hell fire and concentrate more on the forest fires."

The woods arsonist, another delegate stated, should be regarded as being in a class apart and should be dealt with vigorously by the law. To help this cause along he urged that sawmill operators in the state be persuaded to offer substantial rewards for information leading to the conviction of people who set fires maliciously and intentionally.

A large number of women attended the conference and all of them represented one or more of the various national and state women's organizations. In addition to stricter law enforcement and a more vigilant fire prevention program generally, most of these women urged that a greater effort be made in the homes and the schools.

"If you need help on this enforcement business or enactment of more potent laws speedily, just call on us women," one woman said.

Another lady stressed that in stepping up the enforcement pattern, great care should be exercised to make sure that mentally-disturbed people caught setting fires were given medical rather than police treatment.

The vigor of these delegates left no doubt that they were already taking action or planning to in their respective localities and were looking for additional aid, support and leadership from all other available quarters.

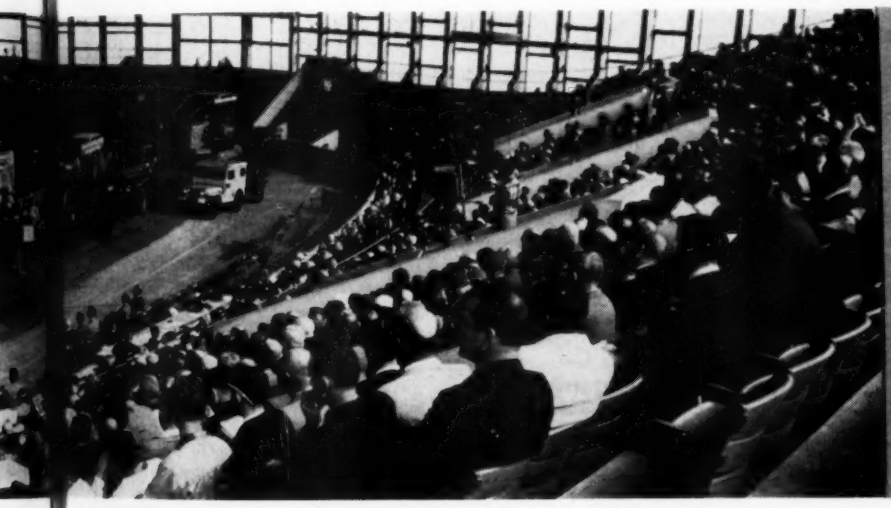
"Don't underestimate the southern people," one young attorney told us. "We're undergoing unusual changes down here today and almost anything can happen. No one can really measure the changes now in progress in perspective and attitudes as the result of the almost too-rapid industrialization of the South. People are no longer doing things simply because their parents did or for similar historic reasons. Their standard of living is slowly going up, more people are educated, and they are beginning to look for the reasons for things. Did you know that Eisenhower only lost this state by something over 10,000 votes? That should show you what I mean." (North Carolina is generally Democratic.)

"I'm not worried about forest fires in the future," an official of the West Virginia Pulp and Paper Company told us. "In 20, maybe even 10 years, education and a sense of responsibility will have done the trick and reduced annual fire losses to a level comparable with some foreign countries. But what I'm worried about is *now*—the big hurdle presented by this next 10 or 20 years. This in-between period could add up to forestry tragedy unless we bring these fires under control."

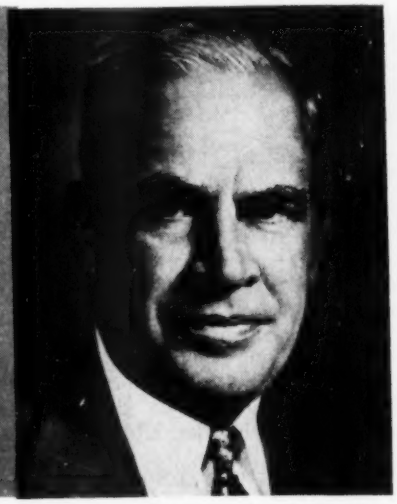
"Forest Fires, North Carolina's Thirty-five Million Dollar (Annual) Loss" was the topic of Governor Luther Hodges of North Carolina. His address was given wide coverage on television, radio and in the North Carolina press.

Governor Hodges called on the state's solicitors and judges to redouble their efforts in discouraging "fire bugs." Governor Hodges said, "I have actually heard reports that community attitudes toward 'fire bugs' have been so lenient and so lax in some areas that law enforcement officers had difficulty in bringing these 'fire bugs' to trial, and then solicitors and judges found juries showing little interest in prosecuting the violators. For examples of this, look carefully at the displays in the entrance to this building. (Here Gov. Hodges was referring to the arsonist displays that attracted such widespread attention at New Orleans.) We must bring home to the individual citizen the seriousness of burning forests and woodlands. The loss of timber is only one factor to be considered. These fires often bring loss of life, property, wildlife and great watershed areas. I hope the solicitors and judges will redouble their efforts to definitely discourage 'fire bugs'."

Gov. Hodges bore down on the stake North Carolinians have in their forests. "North Carolina, like many of our neighboring states, has paid too little attention to its forest resources," he said. "While we in North Carolina may lack some of the great resources such as oil and iron ore, we do have a great natural resource in our forests and woodlands. Sixty-four per cent of the land area, or over 19 and a half million acres, in North Carolina is in forests. . . . The total annual value of forest products in this state now exceeds 750 million dollars. . . . For example, pulp and paper have increased more than 700 percent since 1939, lumber and plywood more than 550 percent



Governor's Conference draws 2400 to Raleigh's big State Fair Arena



Gov. Luther Hodges, of North Carolina

for the same period, and furniture more than 500 percent also. We lead the nation in the manufacture of wood furniture and hardwood plywood. Our forest products industries employ over 80,000 workers or about one-fifth of our total industrial labor force. It is estimated that salaries paid these workers total $243 million annually."

How does the enforcement pattern stack up in North Carolina? Not too good according to Superior Court Judge Malcolm C. Paul. In reviewing the record of the last 10 years, Judge Paul said there had been a total of 7,000 court cases growing out of forest fires or an average of more than 700 a year. There have been 2,550 convictions or an average of 255 a year. Fines and costs have totalled $32,000 or an average of $3,200 per year. That is an average fine and cost for each conviction "of the staggering sum of $12.60—just about enough to buy a half cord of hardwood on the open market—and not enough to pay the fine and costs in a Justice of the Peace Court for an innocuous public drunk."

Place on the one hand "an annual loss of 35 million dollars a year and on the other an average total fine and cost of $12.60 per conviction, and we see how lightly the offender himself views his offense, and the public seldom complains," Judge Paul said. "It is only when the offense is flagrant, or the destruction is appalling, that the public vents its wrath. . . . It is my view that our annual loss weighed on the one hand, and the restraining force of Court action on the other, clearly indicates that the scales of justice, tempered with an abundance of mercy, are out of balance."

Does North Carolina need laws with more teeth to successfully cope with the problem? Initially, attorneys were inclined to think so but after considerable study legal experts find that existing laws are adequate providing they are enforced, according to T. Wade Bruton, assistant attorney general. State Senator W. Lunsford Crew admitted there were plenty of laws "but generally these laws have been late and lax. Did you know that under our law today, if a man intentionally, or through negligence, starts a forest fire that requires days of fighting and expense . . . the guilty party cannot be forced to pay back the actual expenses incurred? He can be forced to pay towing charges for his stalled or wrecked automobile, but not one penny for the cost of extinguishing his forest fire."

One cheering development of the conference from the standpoint of state forestry officials was Senator Crew's announcement that "a substantial increase in appropriations for forest fire control for the next two years" is being proposed. The proposed increase will "help strengthen the present fire control organization, which has been doing a wonderful job on a very limited budget." It will provide for additional foresters, more adequate supervision, more fire equipment operators, more forest rangers and additional technical personnel. "If you want to help a good cause along get busy and contact your legislators" Senator Crew told the audience of 2400.

Four recommendations whereby forest fire prevention may be strengthened were presented by State Forester F. H. Claridge. They are:

1) Redouble efforts on mass prevention education through all media—press, radio and television.

2) Probably more important is on the ground prevention activities with emphasis on personal contacts with individuals not reached by the usual educational efforts and living in hot spot areas of high forest fire occurrence.

3) More assistance to the forest rangers from local law enforcement agencies in the apprehension and conviction of violators of the forest fire laws to insure the certainty of punishment.

4) More severe penalties allowable under the law to be adjudged by the judiciary on those convicted of violations.

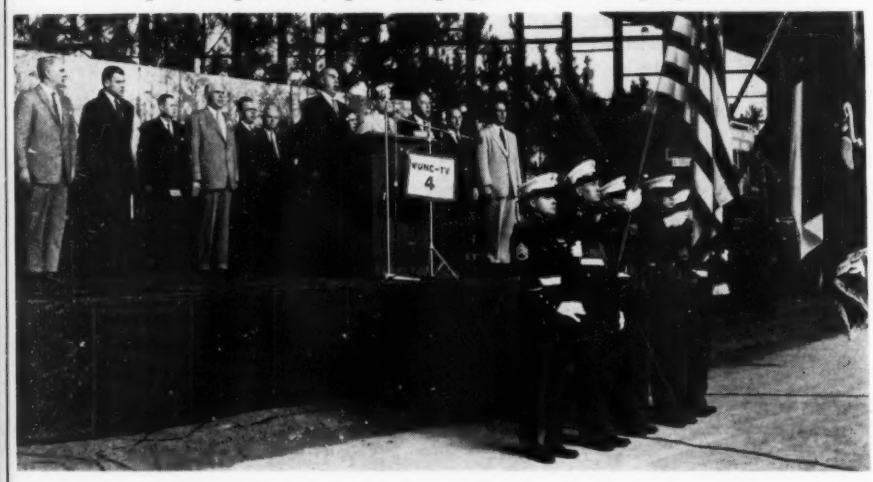
Thomas J. Pearsall, one of the state's leading citizens and landowners offered a three-point program to help meet what he called the "challenge to the state's farmers." They are: 1) Expansion of tree planting by farmers; persons who have put time and money into tree planting are generally more concerned about fire prevention and protection than those who have not; 2) Adjustments in buying methods by the forest industries to make it more practical for farmers to sell small volumes of products regularly on a measurement, grading and pricing basis that they can clearly understand; 3) Formation of active and aggressive forest leadership groups at the county level such as County Forestry Development Committees.

These were the principal developments of the highly successful North Carolina conference. The Conference Executive Committee consisted of Roger Wolcott, chairman, North Carolina Forestry Association; Richard J. Preston, Dean, North Carolina State Forestry School; Fred H. Claridge, state forester; Don J. Morris, U.S. Forest Service; Wm. Maughan, Cary Lumber Company; and T. G. Harris, Halifax Paper Co.

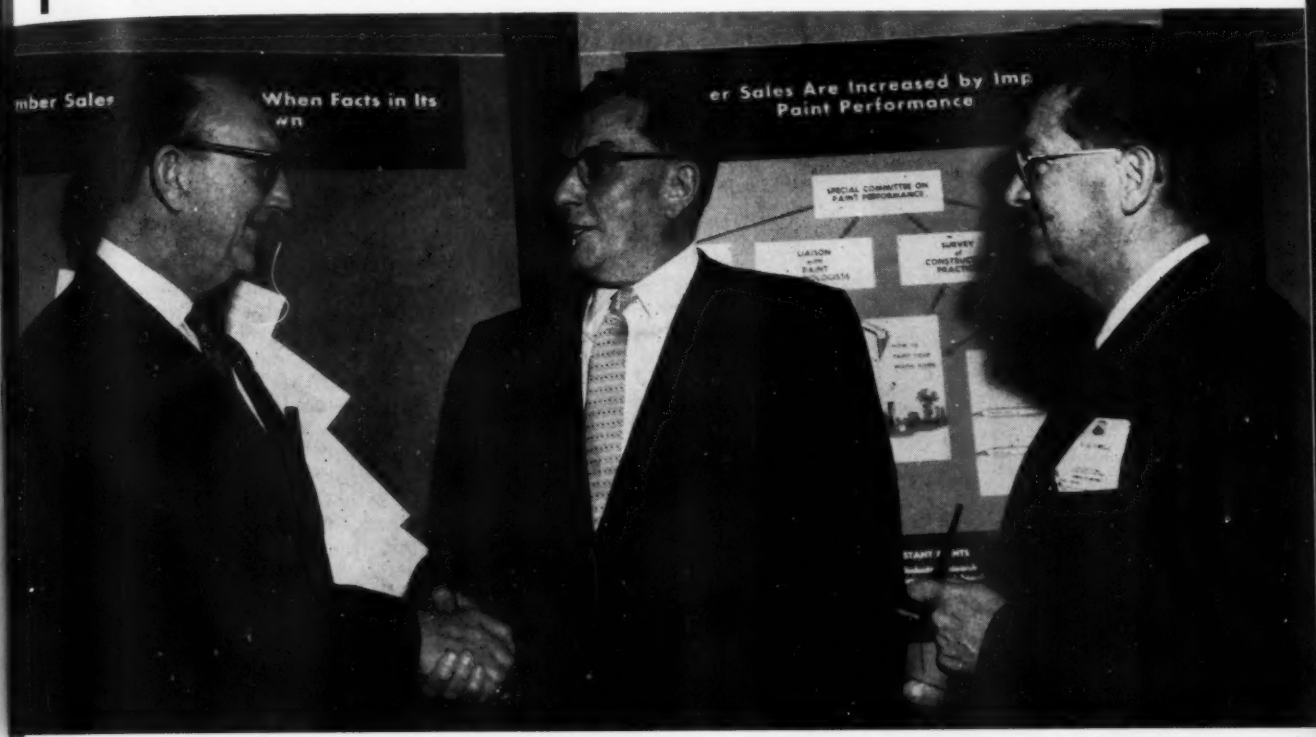
Pastor Nabs Arsonist

A Baptist minister, Rev. W. H. Rose, of Sabine Parish, Louisiana, last month nabbed a Texas man charged with starting a forest fire. According to Louisiana investigators, John Wesley Hugg, who gave El Paso as his residence, signed a written confession. At his arraignment, he pleaded guilty and was sentenced to five months in jail. Two other forest arson cases were also cracked in Louisiana last month.

Marine Honor Guard stands at attention as Norman Cordon, Metropolitan Opera Star, opens fire program with "Star Spangled Banner"



Discussing ways of developing new markets for their products and improving lumber industry services to the public were the main topics at the National Lumber Manufacturers Association's annual meeting



From left to right, Lawrence D. Kellogg, NLMA board chairman, M. A. Hutcheson, president of United Brotherhood of Carpenters and Joiners, and Richard G. Kimbell, NLMA vice president in charge of technical affairs

NLMA Annual Meeting

By BETTY FADELEY

MAURICE A. HUTCHESON, president of the United Brotherhood of Carpenters and Joiners, sounded an encouraging note for the lumber industry when he advocated "a much broader and deeper relation between the United Brotherhood of Carpenters and Joiners and the National Lumber Manufacturers Association than the famous experiments in operation between the Needle Trades Unions with their industry associations," before the annual NLMA meeting last month.

Speaking to more than 100 of the nation's leading lumber manufacturers, Hutcheson said, "Fortunately there are signs that real two-way communication between the Lumber Association and labor is opening up. Your invitation to me is indeed the first effective step in breaking down barriers of communication between our groups. . . Mutual understanding, yes, mutual survival has become the order of the day for the Brotherhood. . . Accordingly, we in the Brotherhood are as concerned with the promotion of a wider market for the use of wood as are its producers."

"We are no less concerned," Hutcheson continued, "with the elimination of restrictions and legal impediments that have resulted in a lessening of the importance of this commodity in construction as its manufacturers."

In pointing up a solution to the lumber industry's problem, Hutcheson referred to Toynbee's theory of *Challenge and Response*. "The slightly difficult and unfavorable environment in which the lumber industry finds itself today constitutes a 'challenge' to which the 'response' must be better technical improvement and a rise in productivity and in greater consumption of wood products. Let us go forward together."

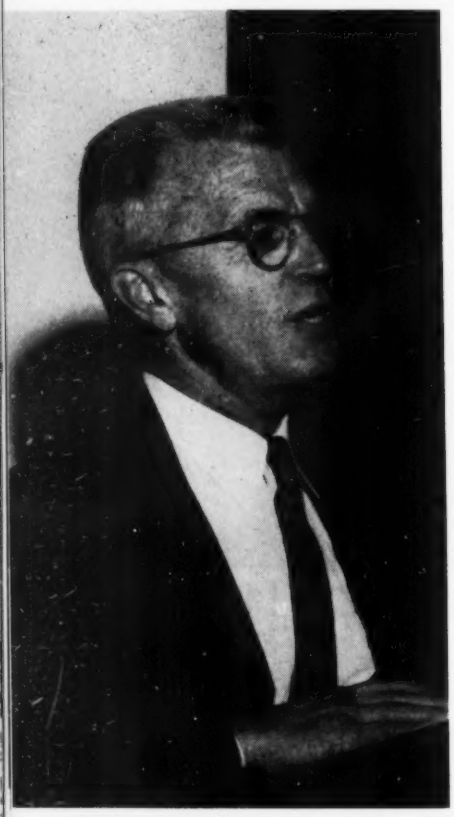
Arthur H. Motley, president of Parade Publications, Inc. and publisher of *Parade* magazine, warmly applauded Hutcheson's offer of the Brotherhood's assistance in helping the association to improve the climate of the lumber industry today, in his address to the assembled NLMA members.

"The climate isn't good in the building industry, and it's your fault," Motley told the lumbermen. He admonished lumbermen for being content to operate as their fathers did, and for not doing enough to promote business. "You must correct the wrong impression that wood is outmoded for construction purposes by doing a great promotion job for the lumber industry."

"The people have a free choice in the market place," Motley said, "and the challenge is to make sure

the people know why yours is the best product. Talk of competing substitutes is simply a failure to understand the free market idea. *It is your job to create a good climate by promoting a feeling of optimism.*

"Housing purchases are off because people don't want cheese-boxes, they want a better product



Dartmouth College professor Albert W. Frey urged thorough study of markets

for which they are willing to pay," Motley continued. "Products and quality, not prices, control purchases. Quality and utility are the controlling factors."

Motley stressed the importance of the alertness in industry to new ideas, and suggested a "Wood Uses Week" to make people aware of lumber's potential. "It is up to you to create the 'want'," he said, "but you must spend more money to do an effective promotion job, and increase productivity to hold the line against substitutes and competitors."

At the NLMA annual meeting, which had been called primarily to discuss ways of developing new markets for their products and improving lumber industry services to the public, Albert W. Frey, professor of marketing, Dartmouth College, suggested a criterion to guide this new promotion program. Frey said that the lumber industry should "conduct a thorough study of its present markets and consumer attitudes as a first step in considering a proposed national advertising-merchandising program in behalf of lumber and wood products."

"Advertising is not an automatic sales stimulant and a mere slogan is not going to change consumer attitudes," Frey warned the lumbermen. "Before the industry decides one way or the other about a national advertising program, it should first engage an advertising agency or firm of consultants to conduct a market survey of the cost and potential of such a program," he continued.

Frey also told the lumbermen that "product improvement and price factors are as important as advertising in influencing consumer attitudes, and urged lumbermen to ask whether they have taken full advantage of these opportunities and whether a national advertising program would result in enough new business to offset its cost."

In carrying out the research theme of the meeting, NLMA members were present at the formal opening of a new wood particle board pilot plant by the Timber Engineering Co., research affiliate of the National Lumber Manufacturers Association. This particle board pilot plant is the first of its kind in the nation, and is the most recent addition to a wood products research laboratory which the Timber Engineering Co. operates in Washington, D. C.

Wood particle board is the newest and one of the more important results of improved utilization practices. It is made of small wood chips, flakes, splinters, or similar particles, mixed with glue binders, and cured with heat under pressure. The particles can be produced from almost any wood species, regardless of size or shape.

This new board's economic importance to the wood industries lies in its use of residues from logging, sawmilling, and product manufacturing. Forest thinnings, slabs, edgings, trimmings, shavings, and even sawdust no longer have to be dumped, but can be converted into a useful product.

Although the particle board is primarily a sheet material, varying in length, width and thickness, it lends itself well to molding into various shapes. Some of its present uses are furniture and door cores, decorative wall paneling, cabinets, and fixtures. Its potentialities as construction material are considerable according to TECO engineers and technologists.

Development of the wood particle board began in the United States and Europe just before World War II, but made little headway until

Mr. and Mrs. Rufus W. Youngblood, with two of their three children, receive key to "Value House" from J. B. Mason (left) of *American Builder*

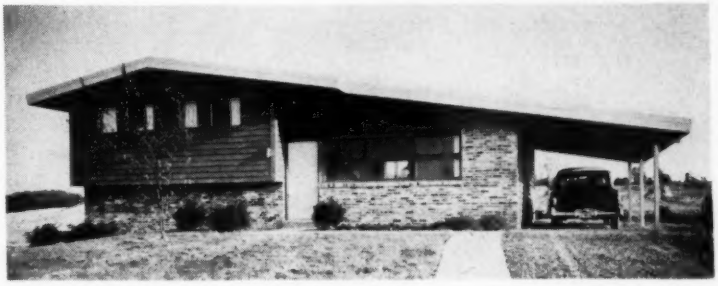
after the war when adequate supplies of resin binders became available. In West Germany, where the material has made its greatest strides, there are now 50 producing plants with new ones under construction; while in the United States there are about 35 plants in operation, with 12 in the construction stage.

Besides the particle board pilot plant, NLMA members viewed the other operations of TECO, which was founded in 1933 by Dr. Wilson Compton, who served as its president for 15 years, to increase the wise, economical use of wood through proper utilization of all forest products. The operations at TECO are concerned with advancing the use of wood as an engineering material, and projects in lumber and wood product research to improve traditional wood products and develop new ones.

The touring lumbermen were shown devices for measuring surface smoothness, and ultrasonic equipment used as an inspection tool for wood-using industries. In the climate laboratory, NLMA members examined the conditioning chamber, in which exploratory tests are conducted on the influences of air conditioning on moisture conditions in wall and floor construction. Then strength tests of wood versus steel barrels were demonstrated, as well as the new dry kiln, 3500-board foot capacity, which serves as a curing chamber for laminated or glued products.

The chemistry laboratory of TECO, where utilization of hardwoods is a primary research function, was of particular interest to members of NLMA. They are currently finding new uses for a chemical called furfural, which is distilled from hardwoods, and is important in the manufacture of plastics. Other projects underway in this laboratory include impregnation of wood with resins and preservatives, coloring of wood for special purposes, development of new methods of seasoning wood, development of new glues, and analysis of glues and finishes.

Large scale testing trusses built using TECO Timber Connectors were exhibited, as were the TECO Trip-L-Grip Framing Anchors. Other points of interest for the lumbermen were the fire testing chamber, a specially constructed oven designed to perform standard ASTM fire tests, and the testing area for railroad cross tie coating exposure.



VALUE HOUSE OF 1957

THE "Value House of 1957" was the prize in a contest sponsored by the National Lumber Manufacturers Association, the Hecht Company (a Washington, D. C. department store) and *American Builder* and *Family Circle* magazines to promote the beauty, economy and versatility of wood in modern home construction.

Winners of this $17,000 split-level, wood-framed home were Mr. and Mrs. Rufus Youngblood of Alexandria, Virginia, who received the keys to the "Value House" at the NLMA luncheon. The Youngbloods have three children, and this will be the first home they have owned. Mr. Youngblood is a member of the Secret Service Division of the U. S. Treasury Department.

The house features dramatic use of lumber and wood products, and was furnished by the Hecht Company for public showing during the fall house-hunting season. For three months, thousands of people visited the "Value House" and entered their names in the drawing which was conducted by the Hecht Company.

The "Value House" has been acclaimed by *Family Circle* for its outstanding design for better living, by *American Builder* for new building techniques and quality of construction, and by the NLMA for its good use of wood.

Built to sell for $16,990, the home contains 1,535 square feet of floor area, including three bedrooms, one and a half baths, and a family room. It is located in Fairfax County, Virginia, one of Washington's fastest growing suburbs. The "Value House" is the pace-setting model of an entire residential development by builder Carl Freeman and engineer-designer Arnold Kronstadt, whose "Americana" homes have won several national awards.

Most striking feature of the "Value House" is the use of wood post-and-beam construction for interior support of the roof load. This facilitated open planning of the living-dining area, while enabling the builder to provide the necessary privacy for bedrooms and baths. An exposed wood beam highlights a cathedral ceiling in the living-dining area, lending a custom-built appearance to the home. The post-and-beam arrangement also contributes to an extended gable roof line with wide overhangs.

The "Value House" is framed of Douglasfir, while the exterior finish is a pleasing combination of western red cedar and antique brick. And, as the wood framing takes up considerably less space than would an all-masonry wall, the home contains more than 50 square feet of bonus floor area. On site prefabrication of the wall panels saved building crews an estimated three weeks' time in getting the home under roof.

Windows of ponderosa pine add to the weather-tight construction and the wood bucks that hold the window frames perform double-duty as part of the structural framework. Subflooring is of southern pine, and the interior trim is of white pine and spruce. Natural birch kitchen cabinets, cypress paneling in the family room and oak finish flooring were among the features most popular with homemakers who visited the house.

An important factor in the overall structural strength of the house is the use of TECO Trip-L-Grip Framing Anchors, to provide stronger joints between wood members.

Panoramic view of the Great Smoky Mountains as seen from the mile high highway leading from Newfoundland Gap

THE FORESTER'S NOTEBOOK

By KENNETH B. POMEROY

AFA's chief forester has brought back from his extended southern trip, an encouraging report on what organizations, industries, and individuals are doing to promote wise use of our resources

FROM the frosted peaks of the Appalachian Mountains to the parched banks of the Mississippi River, Tennessee forests had an air of expectancy in October. In the Great Smokies the last of two and one-half million summer visitors watched Mother Nature clothe the forests in riotous colors. Squirrels, busy with the winter hoard, hushed their chatter long enough to stare wide-eyed at intruders. A startled deer bounded for cover and an unconcerned skunk sauntered off with a disdainful flick of his tail. Midst such settings forestry-minded people discussed their problems.

At Gatlinburg, Tennessee, on October 8 and 9, the Natural Resources Council, composed of representatives from 37 conservation agencies, discussed the recreational needs of an expanding, leisure-bent population. Last year nearly 45 million Americans visited the national forests and uncounted numbers used other local facilities. The major function of the council is to keep its members posted on conservation matters. It sponsors publication of the *Conservation News Service,* a digest of pertinent legislative action, and next spring will publish a comprehensive survey entitled "America's Natural Resources."

Across the mountains a spry, bright-eyed youngster of 80 summers, W. W. "Uncle Bill" Davis, is putting the theories of resource planners into practice as he manages an 8244-acre Waynesville, N. C., watershed for both water and timber production. As Uncle Bill proudly points out how he located the logging roads to avoid erosion and where he planted seedling walnuts and poplars, he also reminisces about days of long ago. Then a double-bitted ax was a lethal weapon and had to be wrapped before it could be carried on a passenger train.

The Waynesville watershed was logged of its chestnut, oak, maple, poplar and cherry about 50 years ago. Sheep grazing followed without success. In 1915 the city of Waynesville purchased the tract and for the next three decades used it only as a source of water. In 1945, town officials asked the North Carolina Department of Conservation and Development and the TVA Division of Forestry Relations to plan a timber management program. Since then four timber sales have netted the town $140,000 plus a permanent system of well-planned logging trails. Steep slopes have been avoided; and water, dispersed through natural leaf

litter, trickles down to streams carrying little or no sediment. All the water passes through a modern filtration plant before domestic use.

Today, standing upon the rim of the watershed, 3000 feet above the city, one sees a beautiful, unbroken valley of timber that will provide an annual cut of 750,000 board feet of logs plus 3000 units of pulpwood. This valley also produces four or five times the present water needs of the community, a perfect example of dual use.

Farther east near Asheville, N. C., farm planners and engineers from N. C. State College and TVA are attempting to remake the economy and land use pattern of Parker Branch. In this 1060-acre drainage, 47 farm units averaged a net income of $433 each during 1953 and 1954. Sediment traps revealed a soil loss of 3 tons per acre per year. Now local residents are cooperating wholeheartedly in development of long-range farming systems that will achieve maximum efficiency in resource use and economic well-being. Already a change in attitude is evidenced by the well kept yards, newly painted houses and improvements in farm practice. This ambitious experiment, scheduled for completion in 1962, may open new horizons for mountain families who are willing to cooperate in community effort.

Back across the mountains, the 1715-acre White Hollow Watershed, near Norris, Tennessee, shows the benefits of watershed management through improvement of forest cover. Prior to acquisition by TVA in 1936 some thirty families tried to eke out a living from soils primarily suited to timber production. Since then all the open lands have been planted or have revegetated naturally, and soil erosion has been practically eliminated. The total annual yield of water has not changed but the improvement in ground cover has reduced peak runoff after summer storms to one-fifth that of former peaks. Meantime, the forests have increased in volume and quality. The next step is to determine the maximum yield of timber without damage to the water resource.

This watershed also is of great interest for an entirely different reason as it is part of the Central Peninsula Wildlife Area. In 1935 the Tennessee Fish and Game Commission released 13 deer which since have multiplied to a herd of 3000 to 3500 head. Last year hunters bagged 650 deer. This year 2400

(*Continued on page* 46)

"DREAMS INTO REALITY"

Response of Dr. Dana upon his being awarded the Schlich Medal by the Society of American Foresters at their meeting in Memphis, Tennessee

Dr. Samuel T. Dana

I REALIZE that one in my position is expected to be seen, not heard. But the Society of American Foresters has been such an outstanding influence in my life that I should feel uncomfortable if I did not take advantage of what may be my last chance to tell so large a gathering of its members how much I appreciate the many opportunities the Society has given me to be of service; and particularly how deeply I appreciate this recognition and the warmth of your greeting.

I am under no misapprehension as to the significance of the Schlich Medal, and I hope that you are not. A profession such as forestry advances not so much because of the leadership of any one man, or of the relatively few men who for one reason or another happen to hold positions of prominence, as because of the achievements of all of its members. Not even a Pinchot, a Graves, or a Greeley can get far without the support of their colleagues at office desks and in every corner of the woods. Every worth-while job, no matter how inconspicuous, is essential to the progress of the profession; and everyone who is handling an essential job efficiently is rendering distinguished service.

Since it is impractical to present medals of recognition to all who deserve them, the award is made to some one chosen by the Council to symbolize, for the moment, the achievements of the profession as a whole. It is a signal honor, and one for which I am more grateful than I can say, to have been permitted this year to serve as your representative for that purpose.

The theme of this year's meeting is "Forestry Faces Forward." Forestry has always faced forward, from the time when B. E. Fernow was the only forester in this country to the present, when there are some twenty thousand of us and some eleven thousand members of this Society. When we paused briefly in 1950 to review the first fifty years of the Society's existence, we did so only to enable us to chart the future more constructively in the light of what has happened in the past. Today differs from yesterday not because of any change in the direction in which we are facing, but because we are now able to build on a more solid foundation of technical knowledge and public understanding, with wider horizons and higher goals.

Today differs also in the host of young and eager foresters who are now taking over. It is a wonderful inspiration to us of yesterday to see, and so far as possible to meet, you of today who are putting forestry into practice on a scale and with an intensity that are transforming dreams into reality.

To you, we throw the torch; it is yours, to hold high!

Through their own technical advances, suppliers to the forestry profession are providing proper and economical tools

TOOLS OF THE CONSULTING FORESTER

By ED LONDON

ALTHOUGH far short of the numbers needed, forestry schools are turning out ever greater crops of graduate foresters to provide scientific forest management assistance needed by the forest products industries and smaller timber owners.

And, keeping pace with forestry educational progress, suppliers to the forestry profession, through their own technical advances, are producing an ever increasing variety of tools for use by consulting foresters, industrial foresters, association foresters, public foresters, small timber owners and tree farmers. Similar to the technological history of other professions such as medicine, law, architecture, and engineering, here again "trade follows the flag."

A forester, whether of vast experience or not, looking through a forestry supply catalog, one of which contains a description of 700 forestry tools, might be hard put to decide which basic tools best suited his purpose. During a search to produce answers about which basic tools are actually needed by the average consulting forester and how used, we consulted James W. Craig, formerly Mississippi State Forester, and now head of Forestry Suppliers, Inc., Jackson, Mississippi; a firm that lays claim to having the largest stock of forestry supplies under one roof.

Using Jim Craig as our on-the-spot source of information, we found that the average consulting forester's work is divided into four categories: (a) Acting as agent for a landowner on a short or long-term contract, to carry out necessary forest management practices; including the arrangement for the proper sale of any designated merchantable timber and the checking for compliance by the cutter with the timber sale contract. (b) Performing an intensive timber cruise in order to estimate the quantity of timber in a given area; to make a report of the needs necessary to protect from fire, insects and disease; or to map the area by air or on the ground. (c) The planning and planting of a new forest or woodlot in order to provide timber for future needs. (d) Timber stand improvement work (TSI) on a price per acre basis.

In addition to the forestry advances mentioned, another development is the widespread and greater public appreciation of the problems of consulting foresters, and the results obtained through their work.

Perhaps this may best be illustrated by the story of Rosemary Plantation, near Terry, Mississippi. Here the idea of a clearly established profit, through proper forest management, has excited the interest of the present landowners; and has furnished an example of a fine contribution to forestry.

Mrs. Catherine W. Sanders, and the trust department of the Deposit Guaranty Bank & Trust Company, Jackson, Mississippi, co-trustees of the tract, became convinced that technical knowledge was required to turn Rosemary's deteriorated hardwood timber land into a successful operation that would produce greater returns in the future.

After applying to the firm of Forestry Suppliers for technical assistance, the co-trustees of Rosemary were furnished with a forestry building plan.

The plan included the making of

The tree-marking crew of Forestry Suppliers, Inc., of Jackson, Miss.

Jim Craig, former Mississippi State Forester, is now head of Forestry Suppliers, Inc.

Tree diameter may be found with aid of cruising, or Biltmore stick held at DBH

an inventory of the amount of merchantable timber available, as well as the timber presently un-merchantable, but which would grow to the merchantable size under proper care. The job further included the designation with tree-marking paint of certain selected trees for sale. At the time of such designation, these trees were individually tallied by diameter and usable heights, and their timber volume computed. This information was later made up into a prospectus or invitation to bid, which was sent to a large number of interested bidders. When the bids were received from the sawmill, or buyer contractors, they were opened and tabulated and taken to the owner who decided on the highest and best bidder. The timber sale contract was then checked by the consulting forester.

An obstacle for the consulting forester, in working with smaller woodland ownerships, is that the expense and time involved in travel is large in proportion to the actual services rendered in the forest.

Therefore, it is readily seen that any tool that cuts time to a minimum in field or office work, allows the consulting forester to render his service more economically.

The job performed by Forestry Suppliers for the Rosemary Plantation owners points up some of the problems of the consulting forester; and shows basic equipment in operation.

One morning, accompanied by three members of Forestry Suppliers field crew, Jim Craig headed for Rosemary Plantation in the firm's bright green station-wagon. At a point southeast of Terry, Mississippi, about 20 miles from Forestry Suppliers' headquarters in Jackson, Jim left the highway, and plunged the heavily laden station-wagon into a field of eye-level grass and rank growth.

Concentrating intently on the forest ahead, Jim found an opening, and gauging distance between trees with an expertness born of long practice, drove the bouncing station wagon deeper into the bottom-land hardwood forest.

"Sometimes, we have to park outside the woods and carry the stuff in," said forester Purvis Huff, as the station wagon stopped in a small clearing.

While the crew unloaded gallon cans of tree-marking paint, and paint guns from the station wagon, Jim spread an aerial map out on the fender.

"Here is where we are," said Craig, "and this is what we are going to do." He indicated a winding white line on the map. "That's the Pearl River forming our west boundary line. Now, we are going to run parallel strips from here to here, evaluating and marking the trees, and estimating their timber volume as we go."

Pointing out the importance of good aerial maps for a project of this kind, Jim continued, "As you can see, these aerial photos, obtained from government or private sources, provide basic reference material for forest management planning. They record forest conditions at a given time and place for essential measurements for classifying timber."

It was easy to see that aerial maps were important tools for foresters. Supplemented by the additional study and measurement of timber on the ground, accurate statistics are obtained for computing total forest area volume and growth, the kind, condition, and size of each tree. In addition the maps furnish the forester with knowledge of the general accessibility, areas of forest depletion by cutting, fire and disease, and the location of the timber in relation to transportation.

Reaching into his kit-bag, Jim placed a pocket-size "stereoscope" over the map. This instrument helps consulting foresters get a three-dimensional view of the area to be mapped, and the species to be cruised. Stereoscopes are available in several types and fold up into a small space for field use.

While the map discussion was going on, Jim's crew was busy pouring special bright blue paint into tree marking guns, and extra one-quart cans that fitted into wide canvas belts for easy carrying. Each man also filled a canteen with ice water from the large can in the station wagon. A man gets mighty thirsty in the woods on a hot day.

In addition to the items strung around their waists, each man carried a cruising stick, and a leather bound loose sheet holder for tally sheets upon which data would be gathered while they marked the timber.

Available in all sizes, the tally sheets, are ruled off on water resistant paper, with spaces provided for

For tree height measurements, many consulting foresters use an Abney level

To determine growth rate, increment borer extracts core of wood, showing growth rings

Talley sheet is used for noting species, diameters, heights, etc.

recording timber data such as tree diameters, heights, species, and volume estimates.

As soon as the names of trees to be tallied were entered on the tally sheets, Jim said, "Let's go." Purvis Huff, a member of the firm and his partner took off in one direction, while Jim and a young man who would enter a forestry school in the fall, started their tree marking strip which would end at the river.

Breaking from the clearing which had been established as an operating base, Jim and his partner started their strip marking along a base line whose beginning was established in reference to a government survey. Using a compass, suspended from a thong around his neck, Jim showed the direction of the marking line to his young partner, and explained that the main features of compasses that appeal to foresters are those that provide easy reading, sturdy construction, extreme accuracy, a rapid settling needle, and those made of corrosion resistant light-weight material.

Jim pointed out that all compasses are made according to one of three systems: standard which has a free-swinging needle on a jewel bearing; the inductional dampened compass whose highly magnetized and sensitive needle swings in a copper bowl, thus forming induced electricity which stops the needle speedily and the liquid-filled compass, featuring a needle encased in liquid, which stops the needle swing in about 4 seconds.

There are so many types of compasses manufactured in the U. S., Finland, and Sweden that a catalog should be consulted to learn which type is most practical for the work to be done.

While Jim explained compasses, he was busy tree marking, measuring and entering data on the tally sheets.

For marking trees to be cut, the forester uses a hand-operated paint gun that shoots a fine stream of special tree-marking paint, (usually an easily seen blue color) at about eye level. Another mark is placed at the base of the tree below stump height. This double marking practice helps prevent the removal of unmarked trees. That can happen! Jim Craig once had the experience of having all of the unmarked trees cut down instead of those that were marked at eye level only by his crew. Of course, this was sheer stupidity on the part of the cutter; but it points out a valuable lesson.

Tree-marking devices include many types of paint guns; the most popular seems to be the thumb operated type and squeeze-finger guns. Although the one-quart capacity gun seems to be the most popular, one-gallon capacity pressure type guns are also available. Carrying enough paint for the average half-day's marking, the larger size is fitted with shoulder straps for easy carrying. At the end of the day all guns are cleaned with kerosene.

Here, the forest growth was a tangled mass of thorny bushes and entwining vines surrounding trees of small and large diameter. No one particular species stood out. There were several varieties of oak, gum, beech, hickory, elm, mulberry, chokeberry, and a few scattered pines. Here was a case where years ago the best trees were ruthlessly cut, leaving much unmarketable timber to take over. For instance, some species of hickory and blackjack oak is seldom marketable at all. This difference in utility forms the basis of one of the South's most difficult forest management problems. Almost everywhere, the pines were cut heavily, and the less productive types of hardwoods were left.

Commenting on this, Jim Craig pointed out that one of the biggest problems facing the consulting forester in putting a timber tract under management, is that in almost every case, his actions are the first forest management steps ever applied. Thus, the consulting forester must gradually begin correcting all of the mistakes that have been made on that tract of land in the past. However, with persistent effort, he can control several factors by means of which he can straighten out his forest so that it will produce greater returns.

"For example, take that oak over there," said Jim pointing. "That's a good tree with a good future. Let's measure it John," he said to his helper.

As John worked, Jim explained that to estimate the board feet of usable lumber in the tree indicated, it was necessary to determine the diameter of the tree a point 4½ feet above the ground at breast height, called by foresters DBH; to determine the merchantable height of the tree that can be used commercially; to either measure or estimate the taper of the tree, usually expressed as form class.

Meanwhile, John held his cruising stick against the tree at DBH, taking care that the line-of-sight at each edge of the tree was correctly positioned on the stick. He noted the diameter, estimated the merchantable height; and then read from the scale on the stick the board foot content of the tree.

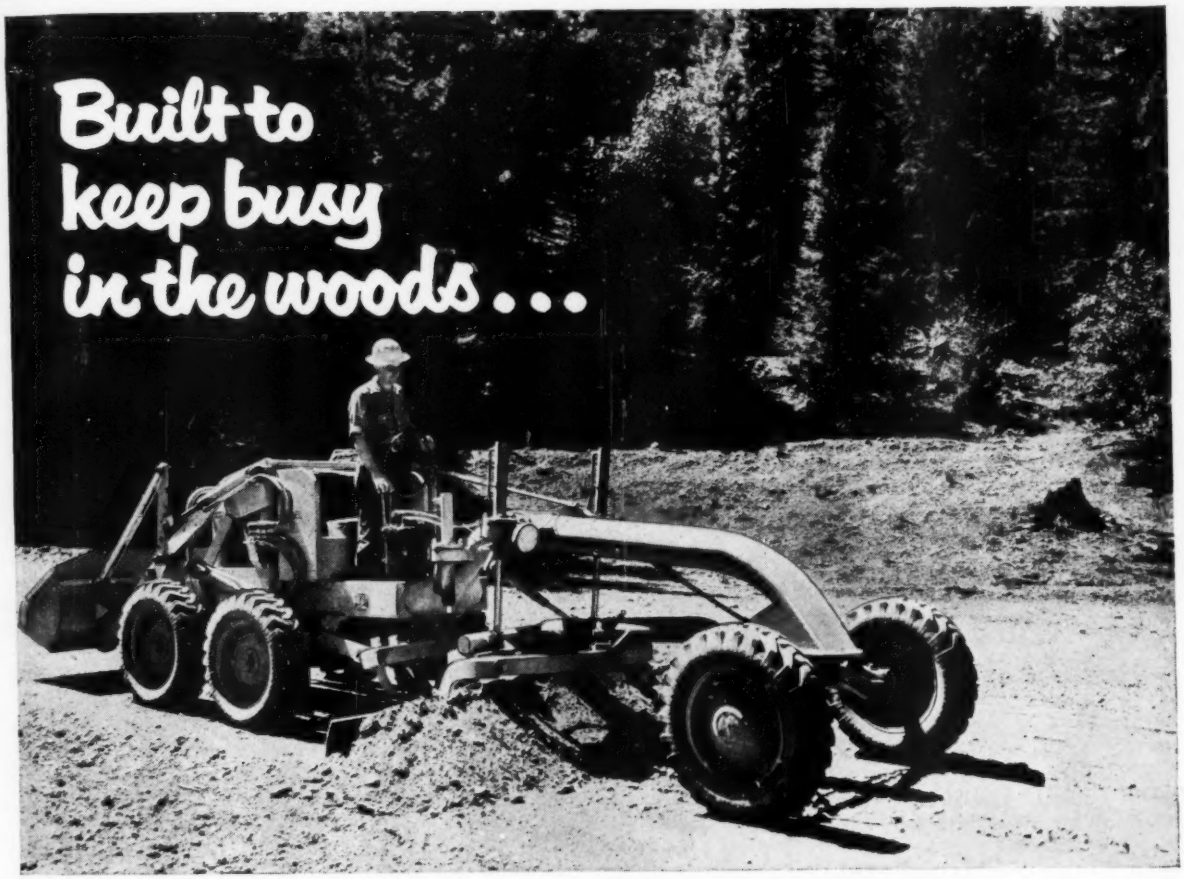
Estimating standing timber requires training and practice. It is easier to find the board feet in a saw log lying on the ground, than in a tree before it has been cut.

Thirty-six inch cruising, or Biltmore sticks as they are called, are available in several types; made of selected hardwood, varnished, and graduated in either Doyle, Scribner or International log scale. Some foresters prefer the type made of aluminum alloy with bronze hinges, fold-

(*Continued on page* 58)

Stereoscope placed over aerial map shows detail in 3-dimension

New instrument used to measure heights, diameters, and many other field measurements



ALLIS-CHALMERS MODEL D MOTOR GRADER

If you're looking for a machine that can do a wide variety of jobs in the woods — do them fast and at low cost, look to the Allis-Chalmers Model D motor grader. It is ideal for building and maintaining access roads, grading fire lanes, filling in washouts and handling many other forest assignments.

Choice of gasoline or diesel engine

The Model D motor grader offers a choice of Allis-Chalmers 50-brake-hp gasoline or 50-brake-hp diesel engines. These engines provide four forward speeds to 25 mph, one reverse to 3 mph — offer dependable power, long life and simplified servicing.

Big grader design

The Model D costs only one-third the price of a large grader — yet is designed with many big grader features. Single-member main frame . . . husky drawbar and one-piece circle . . . work-boosting ROLL-AWAY moldboard . . . ground-gripping tandem drive . . . easy-to-handle controls . . . and simple servicing — are some of the Model D features that contribute to outstanding performance on the job.

Extra attachments for extra work

These additional attachments insure year-round use of the D motor grader:

- **Rear-mounted ⅝-yd loader** for fast, low-cost loading.
- **Hydraulic scarifier,** midship-mounted for maximum effective ground pressure. Cuts swath 27¾ in. wide.
- **Shoulder Maintainer** for safe, one-pass operation — provides quick precision shoulder work.
- **Snowplow** for fast, effective snow removal.

See the Model D grader today

Call your Allis-Chalmers construction machinery dealer today. Ask him to demonstrate the versatile D grader right on your own job.

ROLL-AWAY is an Allis-Chalmers trademark.

ALLIS-CHALMERS, CONSTRUCTION MACHINERY DIVISION, MILWAUKEE 1, WISCONSIN

ALLIS-CHALMERS

Christmas Giving by Members

OF THE AMERICAN FORESTRY ASSOCIATION

YOUR friends, relatives and business associates who enjoy articles, stories and pictures about trees, forests, small woodlands, wildlife, fishing and hunting will make good members of The American Forestry Association. (They have perhaps borrowed some of your issues of AMERICAN FORESTS.)

Please them by giving them Gift-Memberships in your Association. Remember that each gift includes:

1 AMERICAN FORESTS every month of 1957, plus the December issue of 1956 to arrive in time to say Merry Christmas from you;

and 2 A Membership Card in The American Forestry Association enclosed in a letter of Welcome outlining the privileges of membership;

and 3 The Special New Members' Edition of KNOWING YOUR TREES.

Put their names below, and indicate how you wish your name to be signed. We will send to each person you list, a specially designed Christmas Card announcing your gift, to arrive just before Christmas.

----------**Please fill in, tear off and mail.**

To The American Forestry Association
919 17th Street, N. W., Washington 6, D. C.

Please enroll the people whose names are listed below, as Christmas Gift members of The American Forestry Association for a whole year at $6 for each gift membership.

Name .....
(PLEASE PRINT)

Street Address .....

City and State .....

Gift Card to read "FROM "

Name .....
(PLEASE PRINT)

Street Address .....

City and State .....

Gift Card to read "FROM "

MEMBER'S NAME .....

Street Address .....

City and State .....

(The names of additional people to receive gift-memberships may be put on a separate sheet of paper and sent with this order blank.)

547

ZON

(*From page* 6)

Zon's literary work was not confined to writing. He was the associate editor of the *Forestry Quarterly,* the first American periodical devoted to forestry, from its beginning in 1902 until it was merged with the official organ of the Society of American Foresters in 1923. He was also editor in chief of the *Society's Proceedings* and managing editor of the later *Journal of Forestry* from 1917 to 1928. His exacting editorial requirement on both subject matter and form of treatment rendered yeoman service in teaching young foresters to write and in raising the standards of forest periodical literature. His aid to Pinchot in the completion of *Breaking New Ground* is acknowledged thus: ". . . and without whose help this volume would be unfinished still." For many years during his residence in Washington, Zon was responsible for the development of the Forest Service library. His broad interests and his knowledge of several languages aided in building up one of the worlds best forest libraries.

The preceding discussion can give only a sketchy idea of the scope and volume of Zon's activities and of his contributions. Impressive though they are they represent merely the more tangible aspects of his work. His intangible contributions may have been equally or even more important. Stimulating discussions, new and novel points of view, advocacy of constructive and often controversial action, caustic criticism of pedestrianism, complacency and reaction, interesting and effective writing, all contributed. Almost without exception the men with whom he was associated so many years were broadened, made more aware of the world in which they lived, and are under a lasting debt to him.

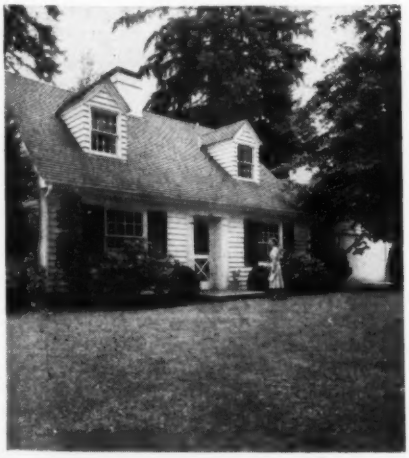
Recognition in many forms was inevitable for such a man as Zon, and it often afforded the opportunity for additional service. It included membership in such commissions, boards and committees as: The National Research Council in its dealings with forest problems in World War I, and for many years thereafter chairman of the Committee on Forestry; American vice-president of the Subcommission on Forest Soils of the International Congress of Soil Science; the Governor's Committee on Land Utilization in Minnesota; Board of

MAKING WOOD SERVE AMERICA BETTER THROUGH APPLIED FORESTRY RESEARCH

DR. JOHN WARREN DUFFIELD, member, Society of American Foresters. Technical Director of the cooperative tree nursery sponsored by forest landowners in the Douglas fir region, he is engaged in field work and research to improve future tree farm crops. He was forest geneticist at U. S. Forest Service, California Forest and Range Experiment Station, 1946-1953.

working with nature to grow better trees for the future . . .

Forestry research has resulted in growing assurance that tree farms can always produce wood for use in lumber, paper, rayon, chemicals and about 4,000 other products.



To supply the wood needed by generations to come, the forest industry is working to improve both the quality and quantity of future timber crops. For example, Dr. John Duffield, nationally recognized forest geneticist, is conducting experiments to develop better Douglas fir seeds and seedlings for use in artificial reforestation. He is also studying the long-range effects of heredity and environment on tree life. Other foresters are working on growth and yield studies, as well as problems in natural and artificial reforestation, tree protection, timber stand improvement and the productivity of various forest soils.

By applying the results of forestry research, owners of the nation's 8,422 tree farms will increase the productivity of their 40 million acres of commercial forestland. As more and more timberland is managed to grow trees in repeated crops, the promise of a perpetual wood supply for the needs of future generations will be fulfilled.

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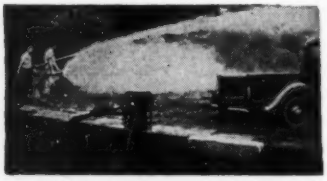

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Control of Botanical Abstracts. He was a member of the Cosmos Club and of many professional and scientific societies. He was one of the first small and highly select group who were elected Fellows of the Society of American Foresters. In 1952 he was the second recipient of the Gifford Pinchot Medal which is awarded periodically by the Council of the Society of American Foresters in recognition of eminent service to forestry or to any phase of the broad field of natural resource conservation in the public interest. A still broader recognition was shown by the action taken in connection with the New York World's Fair in 1940. He was named one of the 600 foreign-born citizens who in the preceding century made the most notable contributions to American democracy.

What were the basic qualities that motivated such a man as Zon? Why did he do what he did; how accomplished such results; gain such recognition? Perhaps his chief actuating motive was a lifelong dedication to the service of humanity. A pronounced social consciousness, a serious concern for the underprivileged and exploited and for ways and means to better their lot, colored much of what he thought and did. And he had the courage of his convictions. High ideals permeated his thoughts and actions. One reason for a lifelong devotion to research was the opportunity that it afforded to perpetuate the spirit of idealism in the forest conservation movement, to keep the "sacred fire" burning.

Breadth of interest extended far beyond the actual growing of timber to every phase of American forestry, to the influence of forests on streamflow, to such projects as the shelterbelt, to the forest potential of underwriting a prosperous and lasting economy. Authorship of *The Resources of the World* is conclusive evidence of world interest. But his interests were not limited to forestry; they extended to every phase of human activity which bore any relation to human welfare.

Zon had that all too rare qualification of constructive ability. He was not afraid of innovations simply because they were new provided of course that they were headed in the right direction. He had the imagination that is so essential to all effective research.

Then there was the possession in exceptional degree of a personality that colored all his contacts and associations. He could and did criticize indiscriminately the high and low on any and all occasions and had the ability to get away with it without lasting resentment. He was a most effective antidote for all smugness and complacency. A highly complex mentality was not too much troubled with the inconsistencies and unimportant detail that distract more literal minded men. But the quality that endeared him to all that knew him best was that he was intensely human.

The Forester's Notebook

(*From page* 39)

sportsmen, in hunts limited to 150 men per day, will pay $24,000 in license fees for the privilege of hunting one day each on this 22,000-acre tract. This poses a question. Should other users of public lands pay a fee for the realization of spiritual as well as material values?

Travelling on down the valley, one hears many references to new pulp mills and what these markets will mean toward improvement of woodland management. At Calhoun, Tennessee, Bowaters Southern Paper Corporation has constructed a log pond 40 feet deep by 488 feet in diameter, large enough to engulf an entire football field. This pond holds over 35,000 cords of peeled pine, about a four weeks supply. Although the huge cranes and endless belts make this pond an expensive structure, its benefits amply repay the cost. Fibre losses from insects and rot are negligible, and a uniform moisture content (soaked) provides a more efficient pulping process.

Bowaters' interest in good forestry is indicated by the 22-man delegation it sent to the Society of American Foresters meeting in Memphis, October 14-17. In fact many other companies must have felt the same way for this was the largest gathering of technical foresters and their ladies ever assembled anywhere.

The first speaker at the Society meeting, J. E. McCaffrey, a vice-president of the International Paper Company, said the South's annual forestry output is valued now at more than five billion dollars and trees will loom even larger in the region's future economic way of life. He listed seven points which must receive special attention if the South is to achieve its full potential: 1) Get the remaining 30 million acres

The supplying of pulpwood, while only one part of the complex papermaking process, provides employment for many thousands of people.

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starts with good forest management

Landowners, foresters, scientists, clerks . . . city dwellers and country folks. These and many others are the people of Champion. Their jobs and their home towns differ, but they all have one thing in common: Their business is supplying America with quality papers.

People like your friends and neighbors make up the Champion team. Every one of them is charged with the responsibility of efficiently utilizing our nation's papermaking resources. It's a responsibility Champion assumes gladly.

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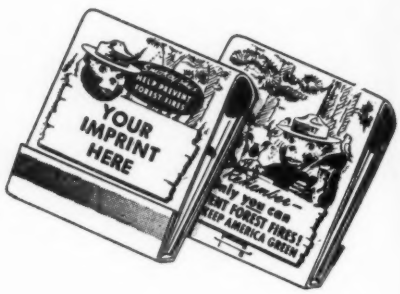
According to unofficial estimates, the total loss from forest fires last year was in excess of ONE BILLION DOLLARS. Anyway you look at it, this tragic loss represents a lot of timber destroyed, many missing paychecks, greatly increased soil erosion, flood damage and loss of wildlife. Even if you were not directly dependent on forests for your livelihood, you can bet that a sizeable portion of this loss came out of *your* pocket. The attention of the people must be focused on this disastrous loss through improved public education. We believe the use of these "fire-preventing" matches is making a real contribution to forest fire prevention education.

This striking red, yellow and black design vividly depicts the result of carelessness. Each time one of these matches is used the user is reminded to be careful—and he is reminded too of you, your company and your product, because your message appears on each matchbook.

The Smokey Bear design is attractively finished in true-to-life colors. And regardless of your business—whether you are a butcher, a baker or a candlestick maker—your imprint on each book builds lasting goodwill. The modest cost makes their use a sound advertising value.



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12-56

of forest land under supervised fire protection; 2) Strengthen the fire fighting forces; 3) Improve cutting practices, particularly on small ownerships; 4) Get all the land well stocked, plant where necessary; 5) Better utilization of logging residues; 6) More research; 7) Better control of insects and disease.

S. M. Nickey, Jr., president of Nickey Bros., Inc. of Memphis, pointed with pride to the Southern Hardwood Research Center in which 38 firms cooperate with the U. S. Forest Service in seeking better utilization of southern hardwoods.

John A. Putnam, leader of the Research Center at Stoneville, Mississippi, urged delegates not to sell hardwoods short. Southern oaks will outgrow pine in diameter, while cottonwood is the fastest growing tree on the continent, he said. At an earlier session of the Association of Consulting Foresters, Mr. Putnam said that quality of hardwood timber is vastly more important to the landowner than rate of growth.

"Let's Cut One for Ourselves," the story of a forestry company of, by, and for foresters, was an interesting sidelight of the convention. Four years ago some foresters in Kentucky and Tennessee decided they wanted an opportunity to "practice what they preached." However, none of them had enough money to acquire a wooded tract of suitable size. So they formed the K-T Forestry Company and subscribed to stock at $10 per share. At the present time there are about 60 shareholders. They own and operate some 1300 acres in the vicinity of Pine Mountain, Kentucky, and by all accounts, take tremendous pride in the accomplishment. Their president, Harry Nadler of Pineville, Kentucky, says this is something new for professional foresters. Many of them spend their week-ends and vacation periods in helping the cause along.

At the business meeting of the Society of American Foresters, President Nelson reminded the 1325 assembled foresters and delegates that "people are as important as timber, and good forest management can only be accomplished through the understanding and willingness of people."

Henry Clepper, Executive Secretary of SAF, said there are now about 17,000 professional foresters of whom 7400 are in private industry, 7000 in public service, 1800 in miscellaneous activities and 750 in education.

The society's 11 technical divisions met on succeeding days for discussions of forest management, silviculture, forest products, private forestry, range management, forestry education, forest recreation, wildlife management and economics.

Four presentations for outstanding services to forestry were made by President DeWitt Nelson.

The Sir William Schlich Memorial Medal for distinguished services to forestry was awarded to Samuel Trask Dana of Ann Arbor, Michigan. Dr. Dana, a past president of the society, a former editor of the *Journal of Forestry*, and for 20 years a Director of The American Forestry Association, is dean emeritus of the University of Michigan School of Natural Resources. As he accepted the Schlich Award, Dr. Dana said, "Forestry has always faced forward and to you of the younger generation we pass the torch. Hold it high."

The Gifford Pinchot Medal was awarded to Inman F. Eldredge of New Orleans, Louisiana, for outstanding service to forestry. Mr. Eldredge is a former member of the Council of the Society, a long-time officer of the U. S. Forest Service,

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1. They come completely assembled in a special carton. Just lift out the pump... fill with water... go into action!
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Two special awards for outstanding achievement in biological research were made to Leo A. Isaac of the Pacific Northwest Forest and Range Experiment Station, Portland, Oregon, and to Philip C. Wakeley of the Southern Forest Experiment Station at New Orleans, Louisiana.

The special problems of wildlife and timber managers also received thoughtful consideration at the annual conference of the Southeastern Association of Game and Fish Commissioners in Little Rock, Arkansas, on October 8 and 9. An on-the-spot reporter, C. Otto Lindh of the U. S. Forest Service, summarized the conference as indicating: 1) A real need for more research on such things as carrying capacity of the various timber types and the effect of timber stand improvement on carrying capacity; 2) The problem is a mutual one and can best be solved by foresters and wildlife technicians working together.

Ten days later forest fire prevention in Arkansas received the earnest attention of 800 attorneys, judges, landowners, housewives, and other citizens in another meeting at Little Rock, Arkansas. In welcoming the group Governor Orval E. Faubus recalled his own experience and stressed the need for educating people to the value of forests in Arkansas' economy.

Boyce Holleman, district attorney from Wiggins, Mississippi, and an exceedingly active advocate for fire prevention, cited the difficulty of enforcing fire laws and said the answer lay only in education, especially education of potential jurors. This theme was expanded further by Mrs. Leo Bartholomew, president of the Arkansas Home Demonstration Clubs, as she called for a program of mass education to be carried on by civic groups.

A feature of the opening session was the posting of fire reports on a large map of the state. Ten fires were burning in Arkansas when the meeting started and within two hours 22 more had been reported from the woods by radio.

The banquet speaker, Fred Smith of Cincinnati, Ohio, said, *"You cannot escape from any problem by holding a meeting. Go home now determined to put into practice what you already know."*

Doing something about Arkansas' fire losses received the attention of a workshop panel under the guidance of Kenneth B. Pomeroy, AFA Chief Forester. Roman Greenword of the Crossett Company urged workshop participants to solidify public opinion into an atmosphere in which forest fires will not be tolerated. Two superintendents of public schools, T. J. Silvey and J. A. Jones, told of their experiences in fire reduction through education and organization of youth groups.

Circuit Judge Bobby Steele, widely known for his activity in fire law enforcement, pointed out the *cooperation of all citizens is necessary in carrying out an effective campaign of fire prevention.* Lloyd Henry, president of the Prosecuting Attorneys Association, summarized the situation as a two-fold problem: *mass education and stricter enforcement of existing laws.*

Alabama followed up in its statewide fire conference of last June with meetings in 66 counties during October.

North Carolina held its state-wide fire meeting on November 14.

And so the echoes grow louder and louder from the "Shot Heard Round the South" in the AMERICAN FORESTS editorial of a year ago.

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Oregon Election

Hard Money and Need for Improved Federal Timber Policies Factors in Oregon Race, Senator Morse Says

"Why do you think you won?" *American Forests* asked Senator Wayne Morse following the hotly-contested Oregon senatorial campaign that was followed with more than usual interest by conservationists everywhere. Senator Morse replied that he attributes his success to four principal factors. They are: 1) "My voting record in the Senate for 12 years which proved that I exercised an honest independence of judgment on the merits of issues and did not permit my vote to be dictated by any pressure group. 2) My opposition to the Eisenhower Administration's giveaway program in the field of natural resources . . . ; 3) The farm issue was a vital one in my campaign and the Administration's veto of the farm bill won many votes for me; 4) The failure of the Eisenhower Administration to support an omnibus federal aid-to-education bill was a very important factor in my campaign."

Other issues enumerated by the Senator as being important in his victory included "the hard money high interest rate policy which has done great damage to the lumber industry in Oregon." Senator Morse also stressed that "throughout the campaign, I emphasized my position on the need for improved federal timber policies and I am sure that many lumber companies, particularly small mills, supported me because they knew the Administration is directly responsible for the economic slump that prevails in the Oregon lumber industry."

Woozley Lauds Ownership Study

The land ownership study started this month by The American Forestry Association was "heartily endorsed" by Edward Woozley, director, Bureau of Land Management, of the Department of the Interior, in a recent address at the dedication of the Potlatch River Tree Farms in Kendrick, Idaho. Mr. Woozley said, "In the Bureau of Land Management we heartily endorse the proposal of The American Forestry Association to have a competent study made to determine what lands should be designated for federal, state and private ownership. A more positive land policy is needed so that foresters who are custodians of public forests may know where they are going and be enabled to plan accordingly. A study such as The American Forestry Association contemplates will take a number of years to complete. Obviously the answers which it seeks will not be available for some years to come."

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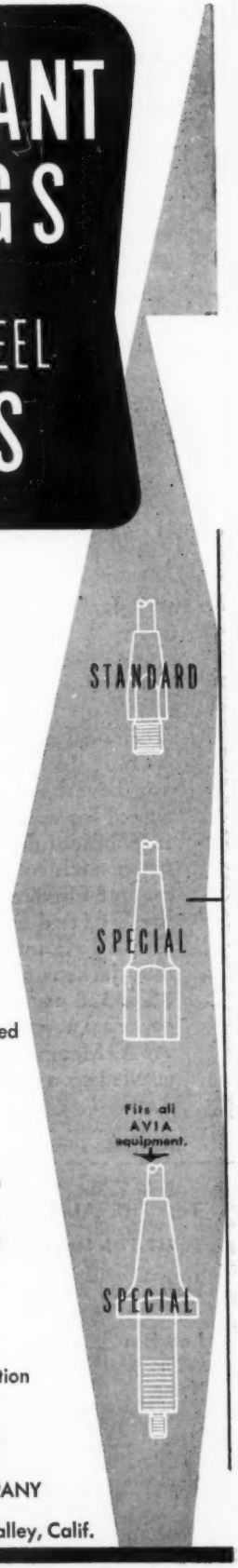

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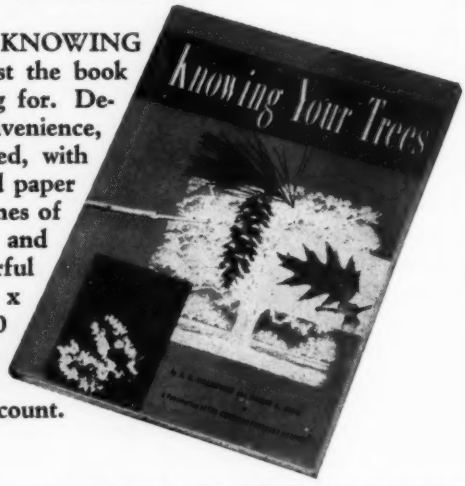

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12-56

Women in Conservation

(*From page* 22)

eventful years of growth and expansion.

Among professional foresters one of the best-known women is L. Audrey Warren, since 1928 business manager of the Society of American Foresters. From 1600 members, when she became the society's first full-time employee, she has helped the organization to grow to its present membership in excess of 11,000. She has handled the society's expanding business problems, has trained an efficient office force, and has managed the advertising and fiscal affairs of the Journal of Forestry. Few women in America, or for that matter in the whole world, can match her record of nearly three decades of dedicated service to the professional aspects of forestry.

For more than a half-century the American Planning and Civic Association has worked diligently to educate the public in good land and water utilization, in the conservation of natural resources, in the development of parks, and in the beautification of highways and roadsides. With headquarters in Washington, D. C., the association has had the leadership of one of the well-known civic leaders of the country—its efficient executive secretary, Miss Harlean James.

Association Women

Space does not permit descriptions of the contributions of the many women of contemporary America who are active in the various phases of resource conservation. But mention should be made of those whose services have had special significance.

Among these women is Mrs. Katherine Jackson Lee, director of The American Forestry Association and chairman of the New Hampshire Natural Resources Council. Another is Miss Pearl Chase, executive vice president of the California Conservation Council.

On the distaff side, probably the nation's most effective organization in promoting the wise use of natural resources is the General Federation of Women's Clubs. Through its potent Conservation Department, the current chairman of which is Mrs. Marion T. Weatherford of Oregon, the Federation is now, as it has been for years, in the vanguard of the forces for conservation.

Since 1940 the Kentucky Conservation Council has actively given

public support to the protection and right use of all resources. Its president, Mrs. J. Kidwell Grannis, is one of the great ladies of this movement. In a similar capacity Mrs. J. Charles Runk, vice president of the Pennsylvania Forestry Association, has done much to add stability and force to the forestry movement in Penn's Woods.

Although her interests, and that of the organization of which she is chairman, range far beyond forest resources alone, Mrs. C. N. Edge of the Emergency Conservation Committee of New York City has rendered yeoman service to forestry. And so has Mrs. Edward La Budde of Wisconsin, chairman of the Women's Conservation League of America.

Today's youth of America are the woodland owners of tomorrow. A woman who has done as much as anyone to encourage future timber owners to grow continuous tree crops is Alma Deane Fuller, educational director of American Forest Products Industries, Inc. Her teaching aids to schools have provided teachers and students alike with information on good forest management. Miss Fuller's work has been notably effective in publicizing the role of the forest industries in American forest practice, and in helping promote the nationally known Keep Green and Tree Farm programs.

Woods Workers

None of the women previously mentioned in this article is engaged in field work in forestry. However, there are women who actually work in the woods, and one of these is Mary Sizemore, whose husband is a consulting forester in Alabama. Mary's technical experience is of such calibre that it earned her election to associate membership in the Society of American Foresters, a form of recognition conferred on relatively few women.

According to American Forest Products Industries, Inc., more than 300 women are certified tree farmers. It should be emphasized that these tree farmers own woodland in their own right, not jointly with husbands. One such tree farmer who actually does work in her woodlot is Miss Elizabeth McGeorge of Pennsylvania. She does most of her own planting as well as other forest management chores on her 125-acre tract.

National Leaders

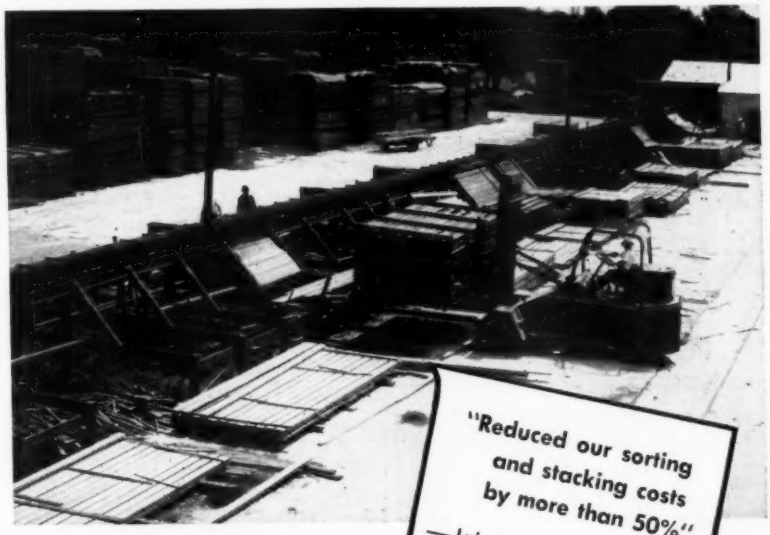
Finally, an account of women in forestry would be incomplete without mention of two ladies who have had great influence although they themselves have never held public office.

Mrs. Gifford Pinchot's long interest in conservation was stimulated by Mr. Pinchot's career as a professional forester and government official. During his lifetime, and indeed in later years as well, she was an advocate of strong federal leadership and government regulation of private forest management.

Mrs. Eleanor Roosevelt's interest in conservation stems from Mr. Roosevelt's early activity as a tree planter on their Hyde Park estate in Dutchess County, N. Y. and as an elected state official concerned with resource preservation. An articulate supporter of conservation, she has been eloquent on the lecture platform and persuasive in her writings.

Through their wide acquaintance with eminent people in government, labor, industry, and agriculture, Mrs. Pinchot and Mrs. Roosevelt have been potent spokeswomen for conservation as a means of social and economic progress.

Such, in outline, is the story of women in forestry. Regretfully, space is inadequate to tell of their inspiration, devotion, and labor.



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Christmas Wasn't Cozy

(*From page* 17)

est tree in the United States" or even the "largest Christmas tree in the World." Match it, tree for tree. Remember your family tree as a child. Will this whopper be remembered as tenderly by your children in ten, twenty or thirty years? You can recall the very decorations, apples, popcorn, paper chains, the few fine treasured ornaments held over from year to year. There may have been a glass balloon, rigged with fine, twisted guy ropes—there were large frosted balls and candy canes, for sure.

Contrast this with today's publicized monstrosity.

Next think about community behavior.

You had an evergreen wreath on the door. Perhaps you made it yourself; you saved the ribbon from year to year.

Your neighbors have a fifty-light circle of red and green hung on their door knocker; there is a large illuminated sleigh on their roof; down the street there are red-nosed reindeers on the lawn their proboscises blinking courtesy of alternating current. The chimneys are outlined in electric blue. Cardboard cutouts punctuate the flagstone walks.

Look at the churches, too. Inside there is traditional, quiet loveliness, a sacred hush. But outside you will find neon lights and a churchyard filled with outsize replicas of stable and manger, live animals, large economy size shepherds and wise men. If there is a hovering angel, she may even have a neon halo.

When Christmas was Christmas for you, the stores were festooned with live green garlands.

Contrast this with electric displays a block long on the facades. The windows are whirling and popping while puppets run, dance, play tricks, drink sodas and ride mechanical animals. Meanwhile a blast of sound comes from an industrious loud speaker, stopping people with tender ears in their tracks a block away.

For toys you had small toy trains, cuddly animals, entrancing dolls.

Trains today run on permanent let-down panels covering one side of the recreation room. They are equipped with switches, tunnels, automatic couplings, bells, switches and are probably maneuvered from a panel as complicated to a child's eye as the panel of a jet. The trains cruise through clusters of houses,

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3. Drown your campfire, then stir and drown again.
4. Ask about the law before burning grass, brush, fence rows or trash.

sawmills, fire-houses, garages and grain elevators. You can run these trains, but can a child *play* with them?

Toy animals today come larger than the children who own them. A child can curl up for a nap inside the pouch of his new kangaroo, or be miseducated on birth processes by unzipping the stomach of a pregnant poodle. Dolls today dance, cry, burp and drip.

On Christmas morning a child comes downstairs to face staggering confusion. He is by turns pleased, bewildered and ends up by selecting one simple toy and retiring behind the tree to play. Or, he may fight back by being "so destructive it does not pay to get him nice things." How many fathers have said, "A load of junk from the ten cent store would have pleased him just as well." Why does he have to be loaded?

Already the merchandising talk has begun. Clubwomen are hard at it lining up sales of Christmas cards —the club makes twenty cents a box. The magazines advertise "Ye Olde Maple Sugar," "fruit cakes made with extra high rum content," "wrought iron reindeers for table use," "bell shaped salt shakers," tree shaped bottle openers, clever napkins with risque line drawings and heady perfume for Les Girls called "Christmas Night."

Our National Christmas Tree began as a simple lighting ceremony designed to touch off similar sentimental rites all over the nation. It is now a Board of Trade fiesta, set up a week ahead of time, with audience reaction, attendance, anticipated dollar gain from trade, and radio and television time figured to the last centime.

The tree is in the President's back yard. I wonder if any of the bright boys have asked him to appear with a sign around his neck that says "Do Your Christmas Shopping Early."

"Let nothing you dismay!"

Utilization—Today and Tomorrow

(*From page* 27)

"Now a few words about the possibilities of fiberboard manufacture. The largest manufacturer of hardboards is now using hardwoods, including hickory, as a principal source of raw material. In effect, this is a raw pulp product. . . .

"With respect to particle board, the situation is not quite as promising. The cheapest wood and, all things considered, the most satisfactory for these processes is soft-

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wood mill waste. Technically there are no reasons why satisfactory particle board cannot be made from the hardwoods, but for particle boards in general the species with higher specific gravity are less desirable than those of lower density. . . The reason for the undesirability of high-density woods is that it takes more pressure to make the bond, and the resultant board is usually at least 20 percent higher in specific gravity than the species of wood used. With a dense species like oak, for example, the end product may be too heavy for core stock, or other uses, and the added shipping costs may put such a board in a poor competitive position. . . .

"One of the most promising fields for hardwood utilization lies in the general wood pulp field. . . . The South consumed approximately 2.53 million cords of hardwoods for pulp in 1955. The percentage of the hardwood pulp component in southern pulp production may be expected to increase with expansion of the industry and as certain new processes achieve wider use. . . .

"Some years ago, we took a very hard look at the possibilities of founding successful chemical processes based on wood, not from the point of view of single product production but from that of an integrated chemical industry. We came to the conclusion that there are strong possibilities of accomplishing this desirable end, especially if we aim at several products. The objective is, of course, the creation of an industry capable of converting the heterogeneous woods-run of hardwoods into chemicals at a profit. . . .

"Hardwoods contain more pentosans than softwoods. Furfural is made from pentosans. The demand for furfural, an oily liquid, of pleasant odor, that is used in petroleum refining, plastic and nylon manufacture, and for making lacquers and dyes is large and increasing. We believe that in our new process, the pentosan fraction ought to be separated first from the rest of the wood and processed separately. That is being done, and again the basic engineering data needed to design such a conversion plant are being obtained.

"Next, we want to be able to separate the cellulose fraction and convert it into not just one chemical but several, so that production can be shifted as necessary to meet the demands of the chemical market. . . .

"We shall, we hope, have a lignin fraction with properties that will make it valuable. Older processes degraded this material to the point where it was not a satisfactory producer of useful chemicals. . . .

"There, in a very rough thumbnail sketch, is what we think we see in the future. I don't know when. Our boys tell me it may be 10 years before we shall be through the final pilot-plant stage in the development of such a process. That seems like a long time; but there is a lot of work to do and the rewards, if we are successful, will be great. . . ."

The Big Dam Fight

(*From page* 19)

the shore line would automatically be considered. At first, the U. S. Fish and Wildlife Service considered establishing a refuge on the shore of the lake-to-be. This plan was abandoned in favor of the Florida Game and Fresh Water Fish Commission which planned a comprehensive waterfowl development on its share of the perimeter lands—about 7,000 acres. Accordingly, Florida obtained a license and prepared to go ahead with its waterfowl development plans.

Now enters the joker in the deal. On August 9, 1955, President Eisenhower signed Public Law 300, which authorized the Secretary of the Army (meaning the Army Engineers) to sell back to the former owners any of the lands around the Jim Woodruff Reservoir which the engineers determined was "not required for public purposes."

When Public Law 300 became known, Congress was besieged by a raft of bills from various state representatives and senators asking that perimeter lands around federal reservoirs be conveyed to private ownership. Almost without exception these bills were instigated by private interests which put pressure on congressmen. They were nothing but bald attempts to reap profits from rising land values—such values having resulted from the creation of reservoirs built at the public expense.

The attitude of the Secretary of the Army in connection with Public Law 300 caught the Florida Game Commission without warning. Originally the Army Engineer Corps granted a 25-year license to the Florida Game Commission to occupy and use 7,273 acres of land and water of the Jim Woodruff Reservoir. Accordingly, the state agency started

laying ambitious plans to create one of the finest waterfowl areas in the southeast.

The bomb was dropped on September 13, 1955, when the Secretary of the Army, acting upon Public Law 300, decided that the areas previously licensed to the state of Florida were no longer needed for "public purposes" and authorized the Engineer Corps to convey the land to private owners.

In the same breath the Secretary of the Army decided that about 7,000 acres on the Georgia side of the reservoir should go back to private ownership. Conservation interests in Georgia did practically nothing as bills were introduced right and left in Congress to turn back its share of the Woodruff Reservoir perimeter lands over to private ownership. A feeble effort on the part of the Junior Chamber of Commerce and the Georgia Conservation League was effectively squelched by Georgia legislators at the insistence of landowners.

Meanwhile, Florida decided to fight. The state's Game Commission was already out on a limb, for it had started development of its 7,000 acres according to the license granted by the Army Engineers previous to the decision of the Secretary of the Army based on Public Law 300. The secretary's action was bitterly denounced by both the National Wildlife Federation and the Wildlife Management Institute. The federation referred to the situation as the "latest example of the Army Engineer's contempt for wildlife values."

Officials of the Florida Game and Fresh Water Fish Commission repeatedly made efforts to effect a meeting with the Army Engineer Corps to determine what was going to happen to the disputed 7,000 acres of perimeter land on the Florida side of the Woodruff Reservoir. The state agency pointed out that plans were already underway for building of small sub-impoundments for production of waterfowl food and that a survey was already underway to determine areas suitable for winter browse for geese and year 'round habitat for upland game, mostly quail. The Army Engineer Corps gave the Florida Game Commission the well-known run around.

Meanwhile, public opinion was being aroused to the point where some action was forthcoming. The stalemate lasted until January 26, 1956, with the Army Engineers giving not one whit of satisfaction to the Florida Game Commission.

Finally Congressman Bob Sikes of Florida was persuaded to introduce a bill in Congress on May 14, 1956, proposing that part of the disputed land remain in public possession as long as the area was administered by the Florida Game and Fresh Water Fish Commission for fish and wildlife purposes.

When this bill hit Congress, an almighty howl went up from private landowners, or to be more exact, expectant private landowners. A whole tribe of Howells, six in all, who owned tracts of land varying from 10 to 10,000 acres, protested violently against the bill. They, and others, saw immense profits go down the drain if they were denied the privilege of buying property along the shore of Woodruff Reservoir.

Sikes' bill was referred to the Committee of Merchant Marine and Fisheries, but by July of 1956 it was brought out on the floor and passed by both houses. The President signed it into law in the dying days of the second session of the 84th Congress. Thus an important victory was won by the conservation forces of America. However, it was not a complete victory, for the Sikes bill stipulates that about 4,000 acres be returned to public ownership. Thus the Florida Game Commission is deprived of some 3,000 acres.

Understandably the Florida Game Commission went a bit slow in developing the area for waterfowl at first. A limited number of acres were selected, disced and planted to chufas (a favorite duck food) during the past summer. Now that the Sikes Bill has become a reality, the commission plans a full-scale program. By the fall of 1957, the reservoir will have attained its full predetermined size, and the 4,000 acres under the commission's jurisdiction will then have attained the important status in the migratory waterfowl picture it seems destined to fill.

As was mentioned earlier, the conservation accomplishments on the Woodruff Dam Reservoir, although primarily affecting the region around northwest Florida, definitely have a nationwide impact. Right now no less than six Army Engineer Dams with impoundments ranging up to more than 142,000 acres (per dam) can be influenced by what has happened at Woodruff. If the Secretary of the Army chooses to ignore the wildlife values on any of these reservoirs, conservationists and sportsmen near these areas have a strong precedent to cite in the Woodruff Dam case.

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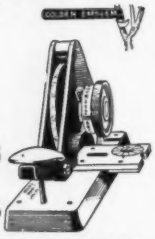
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No More Seedling Shortages?

(*From page* 26)

control. It is more or less essential that we know when to water and how much to apply. Experiments at Auburn seek the answer to whether or not these water needs can be determined on a scientific basis, rather than empirical basis, which is current practice.

Q. Water supply seems to be of growing importance everywhere. Now tell me, Mr. DeVall, in what areas do you feel the need for more intensive research?

A. Primarily in the quality of the seed we plant in nurseries. Too, seedlings produced under different management techniques need to be outplanted on severe sites to test retention of inherited and acquired characteristics.

Q. In general, do you think state nurseries now launched upon soil management programs will continue with them after the impact of soil bank plantings has been absorbed? In other words, are your techniques here to stay?

A. By all means, if the demand for trees is there. And I think it is.

Q. Then the tree planter of tomorrow need not worry about shortages—he stands a good chance of getting good seedlings in any number he will plant?

A. As far as nursery soil management techniques are concerned, yes. However, I think the major concern will be with the quality of trees he will get.

Q. When that comes to pass, I'd say forestry has come a long way.

A. In the South, sir, it has come a long way. That's our trouble. We're trying to catch up with it.

Tools for the Consulting Forester

(*From page* 42)

ing to 7⅝" for handy carrying. Many foresters use the steel band tape which rolls into a metal case.

For working with high-grade timber stands, the consulting forester or members of his crew may use special diameter tapes or tree calipers for measuring tree diameters.

Much in use is the Abney hand level, popular for measuring the height of a tree. Only 6½" long, usually carried in a leather belt case, the Abney level enables a lone timber cruiser to get more accurate information, faster, than can be obtained by two men using cruising sticks.

However, Jim had even more progressive tools in his bag of tricks. The Haga altimeter, carried either in leather belt case or pocket, is a newly improved tree height finder.

With a little practice the following field measurements can be made by a single person.

1. Basal areas in square feet per acre by the Bitterlich angle method.
2. Measure diameters on standing trees at any height between 0 and 72-inches, at a distance of 66' to the nearest 2 inches.
3. Measure total heights of trees.
4. Scales self adjusting for any slope for 1), 2), and 3) — scales 2) and 3) based on a horizontal distance of 66' from tree.
5. Built-in rangefinder for finding 66' or 99' horizontal distance regardless of slope.
6. Topographic scale between plus 180 and -120.
7. Degree scale between plus 70 degrees and -60 degrees.
8. Per cent scale between plus 270% and -170%.

These modern tree measuring tools, Jim Craig explained, are used more often on high-quality timber requiring more careful grading.

Usually working on a percentage of the forest yield, an arrangement attractive to both parties, it gives the consulting forester a source of steady income, and the landowner an opportunity to have his forest lands properly managed from the proceeds.

In addition to the proper and most economical tools for his work, the professional consulting forester furnishes a background of good professional training, adequate business experience, and a crusading spirit that will enable him to get across the idea to small forest owners, that the best way to manage timber land is the "forestry" way.

Reading About Conservation

(*From page* 23)

of gaiety and joy and satisfaction in the outdoors. Today the dominance of things that Emerson wrote about at the start of the Industrial Revolution is almost complete. Gadgets are in the saddle and rule mankind, at least in our America now that we have broken down a virgin continent and filled it with internal combustion engines.

May it not be said that it is time to recognize a standard of values as well as a standard of living? The English writer, Jacquetta Hawkes has pointed out that it is not sentimental "to believe that life and amenity should not be sacrificed to production, to the rapacity of the machine." The so-called practical people of the world profess difficulty in understanding what conservationists of Olson's stripe are talking about when they want to save a natural area from destruction, or suggest that a billion-dollar dam be moved somewhere else than set in a scene of natural beauty. They scorn those who speak of the values of our wildlife and watersheds. It is just possible that Olson's book may enlighten some of these people, if they will lay their hands on it.

No, it is not an ordinary singing that you will find in "The Singing Wilderness," by Sigurd Olson. But it will repay your listening, for its theme is the same one spoken of by the great Darwin, that "disinterested love for all living creatures, the most noble attribute of man."

Frank Heyward, Jr.

(*From page* 5)

from his property since the first year of purchase. After ten years the farm began carrying itself as far as expenses were concerned, and during the last three or four years it has been paying off at a good rate of interest on the investment. How did he do it? Hard work and patience is the answer. "It's been a long pull," Frank says, "interrupted by bad fires. I may say without fear of error that only aggressive and intelligent use of controlled burning by my resident manager has kept us in business."

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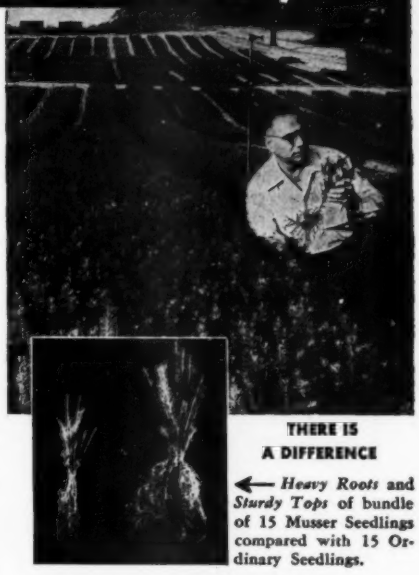

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FOREST FORUM

(*From page 4*)

later extensions, a situation exists similar to that in the Adirondack Preserves, but far more sweeping in its extent. By contrast to the groves of sequoias in California, all of which are accessible and of immense value as preserves, the great area of Douglas-fir and associated species covers more than a million acres, with several billion board feet of saw timber, not one percent of which can be seen from the trails or roads, and which, sooner or later, almost inevitably will suffer the fate of the similar stand destroyed by the Tillamook burn of 1936, or the great blowdown of 1921 on the Olympic peninsula, which leveled five billion feet, of which only about 200 million feet were salvaged. Only within a short distance of a trail or road are these trees visible, and the dense underbrush discourages further exploration. Therefore, the sentiment which so vigorously challenges any modification or reduction of this "wilderness" area, which was made a national park to preserve it, must obviously rest on the mere sentiment for preservation, not on any direct, practical benefit to persons seeking recreational inspiration. Actually ninety-nine percent of all recreational use of forest areas is confined to the waters and shores, roads and trails. It was a knowledge of these facts that made possible the zoning and multiple use of the Chippewa and Superior National Forests and which govern the location of recreational areas on all the remaining national *and state* forests.

But the greatest objection to a policy of empowering the Congress to dictate all matters concerning wilderness areas is that it means a deliberate substitution of political motives and pressure group influences in place of technical administration composed of men trained and experienced by decades of handling the many problems and adjustments required in multiple use administration. The plain facts are that persons and organizations actuated by sentiment and enthusiasm for single purpose, monopolistic use in keeping with their objectives, *have no confidence whatever in the integrity, wisdom or public spirit of trained forestry executives. They do not desire or intend to permit any power to remain in the hands of these professional men, which conceivably might at some time be exercised to modify, mitigate or diminish the absolute standards conceived as the sine qua non of wilderness areas, or undisturbed nature.*

Now it happens that the profession of forestry has come of age in this country after fifty years of experience. It has a codified standard of ethics, and a society on the level of those of physicians, lawyers and engineers. Instead of being solely interested in cutting down trees, and aiding the "lumbermen" in denudation, foresters have been largely instrumental in the creation of state and national parks and recreational areas as part of their field of service, actuated by Gifford Pinchot's maxim — "The greatest good of the greatest number in the long run."

When sentiment is divorced from common sense and economic facts, it can result only in injury and loss to the public. When combined with sound judgment, it is a powerful force for good. It would be as sensible for the public to depend on faith healing, and dispense with physicians and sanitation, as to rely on pressure groups and Congress for wilderness "preservation" and eliminate the professional guidance under which the existing extensive wilderness areas were created in the national forests and elsewhere.

For these reasons, it is the belief of the writer that the Humphrey Bill S4013 is wrongly conceived, is inimical to public interests and should not pass.

H. H. Chapman
Harriman Professor Emeritus
School of Forestry
Yale University

EDITOR:

I commend your Association for the staunch stand it has taken in opposing S. 4013, which proposes to establish a national wilderness preservation system.

Your organization has long been recognized as a strong advocate of wilderness programs and trail riders activities; yet you recognize the one-sidedness and "special privilege" of the measure in question. This is evidence that The American Forestry Association is on the job and is not to be misled on this important issue.

The Western Forestry and Conservation Association staunchly opposes S. 4013 also and companion bills on the basis that they are not compatible with the principle of a balanced use for all our natural resources. Let me know if anything new develops along this line, and if we can join forces in combatting an evil that would work to the detriment of our western economy.

Stuart Moir
Forest Counsel
Portland 4, Oregon

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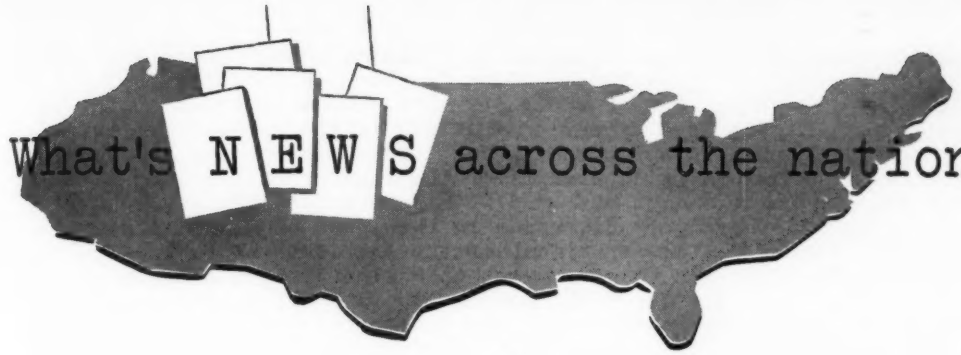


VIEWS AND COMMENTS THAT COME OVER THIS DESK convince us that the so-called "government worker" is something of a mystery to the American public. Some critics picture him as a theoretical person, not very practical, who never owned any land and hence can't have the slightest idea about managing it properly. This type of critic usually concludes his evaluation with the statement, "He never met a payroll" as though that should be some sort of clincher. Another type of critic pictures him as a sort of dull plodding individual—loyal to which ever regime happens to be in power at the moment—but with no clearcut views of his own on anything. This type of critic sees the government worker living in a sort of unrealistic no-man's land from which he will one day make his escape if he has any gumption. If, on the other hand, he stays on, it means he has "given up" and merely hopes to collect a pension that makes up in part for all the things he missed during his working career. Both of these views are extreme, of course, and neither is basically correct.

THE SO-CALLED AVERAGE "GOVERNMENT WORKER" should be neither a creature to pillage or to pity. By and large, he is better educated although more lowly paid than people in competitive lines of endeavor. As a rule, he is something of a specialist and that doesn't mean he is any misty theorist, either. When one becomes acquainted with such a specialist on agriculture, say, one quite often learns that the specialist was born and raised on a farm and possibly milked ten cows night and morning before he went to school. But what is it that leads these people into government, and keeps them there? After knowing and talking to hundreds of government workers over a period of years—and some of them are personal friends—we are convinced that the basic abiding interest of a majority of career government workers is simply interest in GOOD GOVERNMENT, meaning sound administration as distinct from the politics that occupies the attention of the general public for a brief period every four years. To one outside the government like the writer, it is notable that his friends in the same boat get steamed up over government in the months of September and October every four years and then promptly put a damper on this interest right after election day to turn to "more important things." But be the guest in the home of almost any government worker of some responsibility any month out of any year, and sooner or later the conversation swings around to "good government," as again divorced from partisan politics. In short, the government worker thinks about "good government" almost constantly because that's his job. And one might add that it is a good thing somebody does.

HOWEVER, ON THE BASIS OF COMMENTS THAT COME across any editorial desk, we are convinced that the great bulk of the public has no clearcut ideas about the government worker, one way or the other. To the public, the government worker seems to be something of a mystery and this has resulted in a certain amount of curiosity that has never been wholly satisfied. One reason is probably the fact that no writer has ever clearly described the government worker to the public in terms it could understand. Some have tried but they have never quite pulled it off. This is regretable because a better understanding of the government worker—the man who really makes the wheels turn—would lead in turn to a better understanding of the importance of politics and why more Americans should have a continuing interest in the subject.

IN THIS CONNECTION, TWO OF THE BEST THINGS IN WASHINGTON are the objective reports on what is going on inside the government and what government workers are thinking

(Continued on next page)

about as related by Jerry Klutz, whose "Federal Diary" appears regularly in the Washington Post and Times Herald, John Cramer's "9 to 4:30" in The Washington Daily News and Joseph Young, who covers the same waterfront in the (Washington) Evening Star. As a mirror of what government workers are thinking about and the level on which they think, these reports are valuable.
A recent Klutz column is an example of the type of challenging material these three reporters dish out—and it's a safe bet this particular article was chewed over and thoroughly discussed in thousands of Washington area homes. Quoting Luther H. Gulick, president of the Institute of Public Administration and a long-time advisor to government on administrative management problems, Mr. Klutz reported, "There are real 'dangers ahead' for our Civil Service system despite the fact that it appears to be on a solid basis and has overwhelming public acceptance. The rise of an 'irresponsible bureaucracy' and the growing tendency to regard politics as a 'dirty business' are two of the major challenges that will be facing our government. With the very success of CS reform, we face an imminent danger of the rise of irresponsible bureaucracy."

AT THIS POINT KLUTZ DOES NOT HASTEN to provide a definition of "bureaucracy" because his readers already know it. In our case it would be well to add Dr. Gulick's definition of the term as set forth in his book American Forest Policy published in 1951. "Bureaucrat and bureaucracy," Dr. Gulick said, "are used in this volume in their scientific, not their popular meaning. As such, 'bureaucracy' is a system of administrative organization in which the work of an enterprise is divided among major and partially autonomous functional bureaus, each under the day-by-day direction of a corps of career administrators. The responsible members of this career group are 'bureaucrats.' 'Bureaucracy' is characteristic of all large-scale and long-continued organizations, public or private, civil or military, secular or ecclesiastical."

GETTING BACK TO MR. KLUTZ'S COLUMN and still quoting Dr. Gulick, "The more successful we are in building a career public service, free from periodic housecleanings and political interference, the greater is the danger that we will set up as a by-product an entrenched and self-defensive bureaucracy, a favored 'class,' many of whom are more concerned with their own salaries, security, comfort, and status than with any responsibility or accountability for public service. This is true for any profession in any land and at any time. The greatest danger is with government officials because they must be entrusted with extensive powers."

ON POLITICS, GULICK STRESSED THE DANGER OF THE "persistent American tendency to smear politics, political activity and politicians. Politics is a bad word in America, when it ought to be a good word. Especially is politics required in a self-governing democracy, because politics is the activity of the citizens in debating and deciding on the public business and public policies; and politicians are those who make a career of winning elections by working on these matters of public education, leadership, decisions and group political action. If this is dirty business, democracy is in a sad plight.

"WHY DO I STRESS THE DANGER of denigrating, of running down, politics?" Dr. Gulick asked. . . . "It is through political supervision that we make bureaucracy safe. It is through politics that we establish accountability. It is politics that gives us the reality of democracy in a world of increasing technological specialization. What we need to do is think a little straighter and work a little more sensibly to make politics what it should be by harnessing political forces appropriately to the processes of government and administration and not to go around denying that we need and must develop politics in self-government." To meet these future challenges, Gulick recommends "greater administrative and political decentralization, the development and use of generalists, the recruitment from year to year of a fair share of the rising generation, and the elevation of responsible politics and political action to its proper place in our democratic culture."

THIS IS THE SORT OF THING OUR SO-CALLED "GOVERNMENT WORKERS" were discussing in Washington the Sunday before election. They will be discussing this and related kindred subjects for the next four years. But what about the rest of us?

HAS IT OCCURRED TO YOU?

There are many members and friends of The American Forestry Association who find it impractical to contribute to its educational activities during their lifetime. Gifts in the form of a bequest are welcomed. Officers of the Association will gladly consult at any time with those who wish to know more about designating gifts for educational work in forest conservation.

Following is a paragraph suitable for incorporation in wills:

"I hereby give, devise and bequeath _____ to The American Forestry Association, Washington, D. C., a non-profit District of Columbia corporation, or its successor, or successors, for the purpose of promoting the corporate activities of said Association."

THE AMERICAN FORESTRY ASSOCIATION
919 Seventeenth Street, N.W.
Washington 6, D. C.

Christmas Trees . . . Profitable Woodland Crops

(*From page* 16)

During recent years the price per bale has started around $1.25 daily. During the cutting season of a few weeks it is possible for one man to earn around $2,000.

Last year a cooperator with the Flathead Soil Conservation District made around $4,000 in about 30 days cutting Christmas trees. He and his wife, and 17-year old son with the help of a hired man cut 3,100 bales of trees. Thirteen hundred bales were sold for $2.65 per bale. Another 1300 bales were sold to a trucker for $2.10 a bale, while 500 bales were sold to a local yard for $1.65 per bale. Stumpage cost was 42 cents per bale on 500 bales and 50 cents on 2,600 bales.

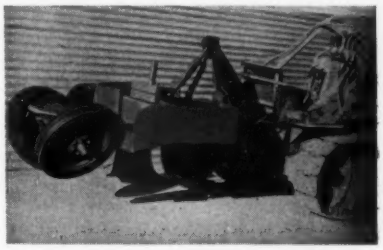
A cooperator of the Lake County Soil Conservation District over a 10-year period has averaged 2,000 bales annually from 480 acres. Cutting follows a six-year rotation. The owner does most of the harvesting and carried out some conservation practices with the cutting operations.

In the Lincoln Soil Conservation District one cooperator and his wife cut as high as 900 trees in a day.

As a general practice most of the stumpage sales are made on public lands. Such sales are made primarily to improve the composition of the stand and to regulate the spacing for the production of saw timber.

The average farmer is interested in growing Christmas trees as a woodland crop. It is profitable for him to take advantage of the high returns for his labor and harvest his own tree crop. Besides, he is interested in cutting his stand to improve it for continuous production of Christmas trees. When the farmer hires cutters he prefers to pay them by the day so they can take time to make a uniform harvest on all areas and do some cultural work. The contract cutter naturally selects the best areas and the easiest cutting and has little interest in improving the area.

At least one-half million acres of forest land in western Montana are by productivity and location well suited to growing Christmas trees. This industry is of sufficient importance to Christmas tree growers and those who profit from related activities, that every effort should be made to maintain its position in the economy of western Montana. In Soil Conservation Districts it will continue to be an important phase of the conservation program.



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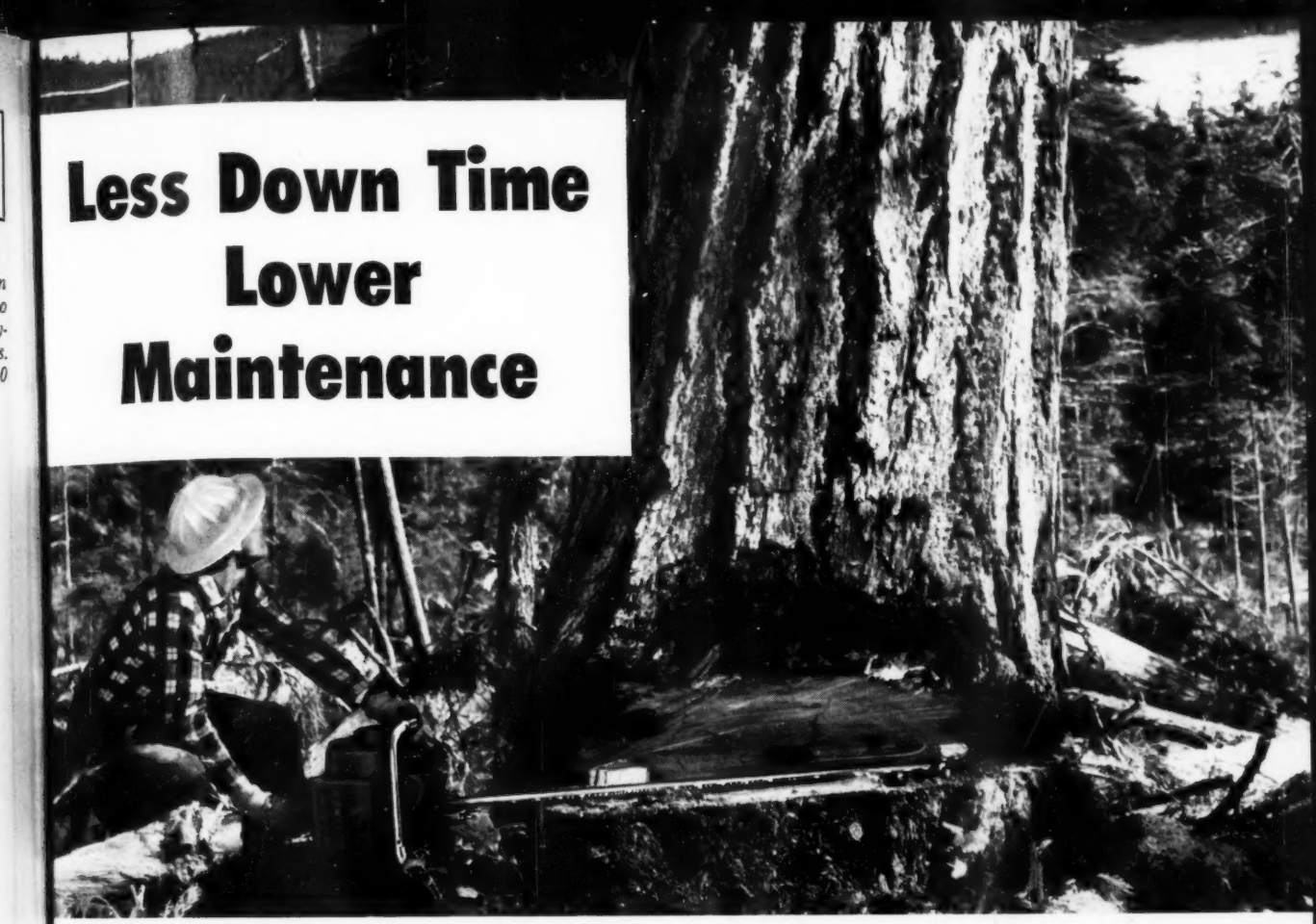
Feature Photo of the Month

Photos used on this page will be of unusual rather than esthetic qualities and subject matter will be restricted to scenes, events, objects or persons related to the use, enjoyment or unique aspects of our renewable natural resources. For each picture selected AMERICAN FORESTS *will pay $10*

Photo submitted by James D. Burton of Ames, Iowa

This unusual twosome was discovered on the campus of Iowa State College. The cavity of the tree, a black maple, in which the sporophore is growing is eight feet above the ground and faces South. The head of the "toadstool" is three inches in diameter

Less Down Time Lower Maintenance



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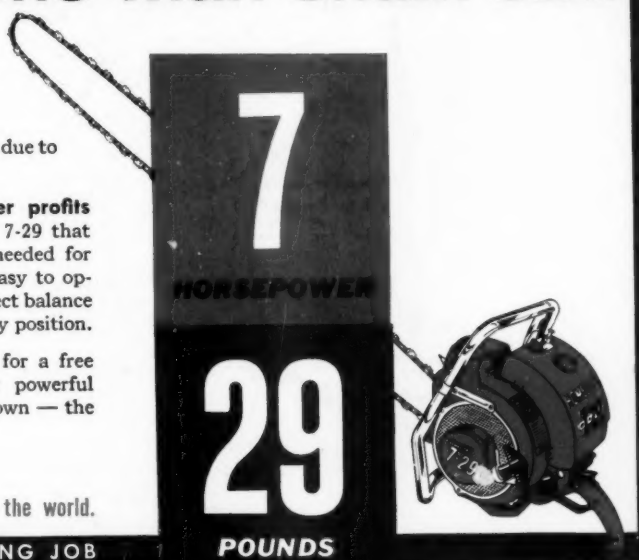

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